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ACCESSION NBR:8803070149 DOC.DATE: 88/02/29 NOTARIZED: NO DOCKET #
 FACIL:50-316 Donald C. Cook Nuclear Power Plant, Unit 2, Indiana & 05000316
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 ALEXICH,M.P. Indiana Michigan Power Co. (formerly Indiana & Michigan Ele
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SUBJECT: Submits application for alternative disposal steam generator
 encl concrete.Fee paid.

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AEP:NRC:1053

Donald C. Cook Nuclear Plant Unit 2
Docket No. 50-316
License No. DPR-74
APPLICATION FOR ALTERNATIVE DISPOSAL
STEAM GENERATOR ENCLOSURE CONCRETE

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

ATTN: T. E. Murley

February 29, 1988

Dear Dr. Murley:

Indiana Michigan Power Company (I&M) submits this application pursuant to Title 10, Code of Federal Regulations, Section 20.302 (10 CFR 20.302), for the disposal of licensed radioactive material on the Donald C. Cook Nuclear Plant site. The proposed method of disposal is not currently authorized by the Cook Nuclear Plant operating license.

Large sections of reinforced concrete will be removed from the Cook Nuclear Plant Unit #2 steam generator doghouse enclosures and must be disposed of. Decontamination by mechanical removal of the paint, and surface concrete to a depth of 1/16", will eliminate the majority of the contamination accumulated in the concrete. However, the concrete sections will have trace quantities of Cobalt-60 (Co-60), Cesium-134 (Cs-134), and Cesium-137 (Cs-137) distributed in the remaining outer surfaces.

The potential radiological and environmental impacts of the proposed disposal have been analyzed and evaluated and are presented with this application as Attachment 1. A cost benefit of the concrete disposal versus the most feasible alternative is also discussed in Attachment 1. I&M concludes, based on the information presented here, that the proposed activity presents no significant impact or hazard to the public health and safety or to the environment.

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Dr. T. E. Murley


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AEP:NRC:1053

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Sincerely,



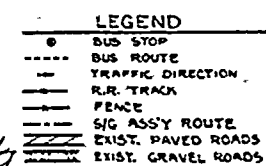
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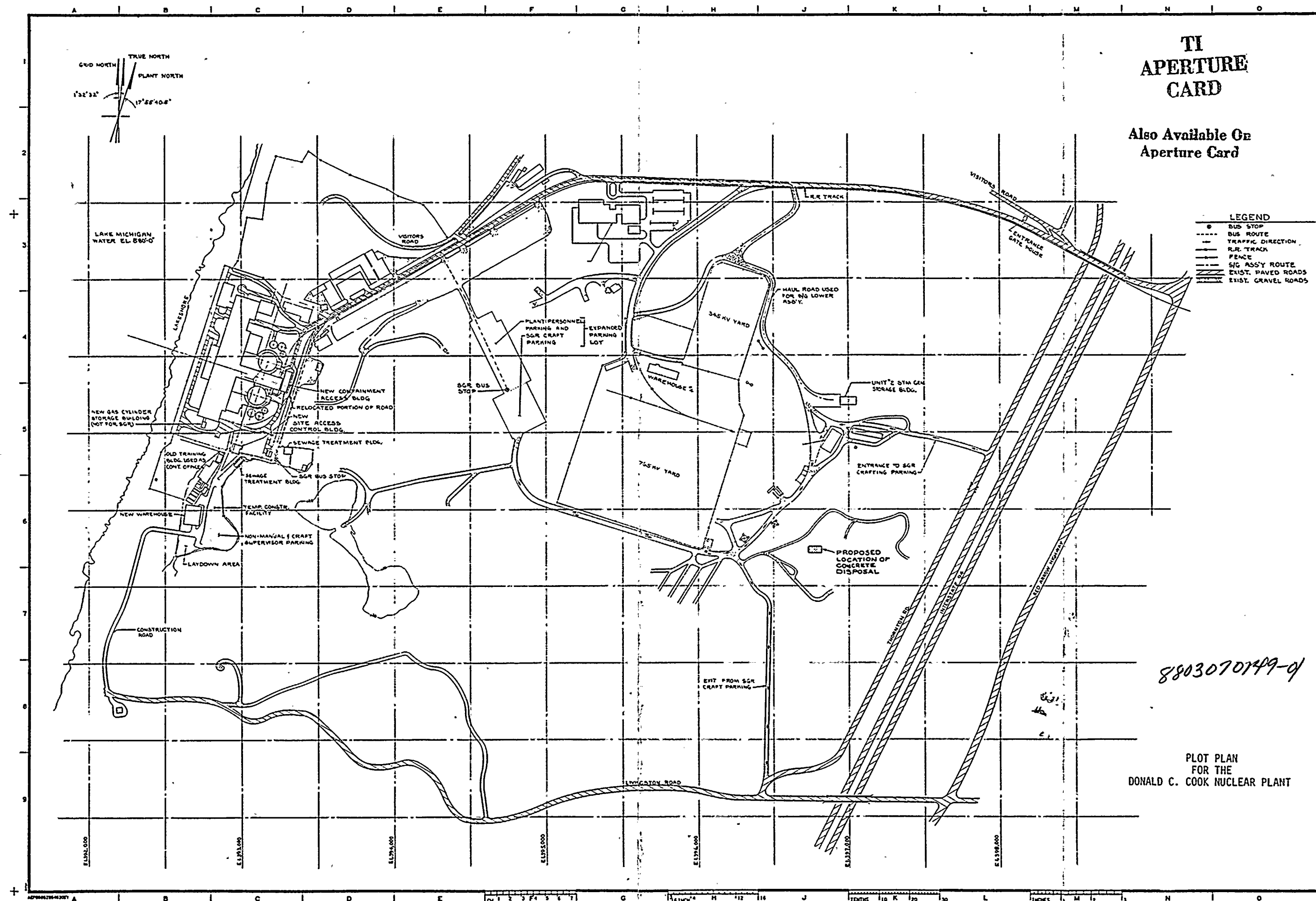
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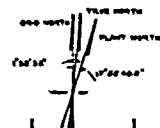
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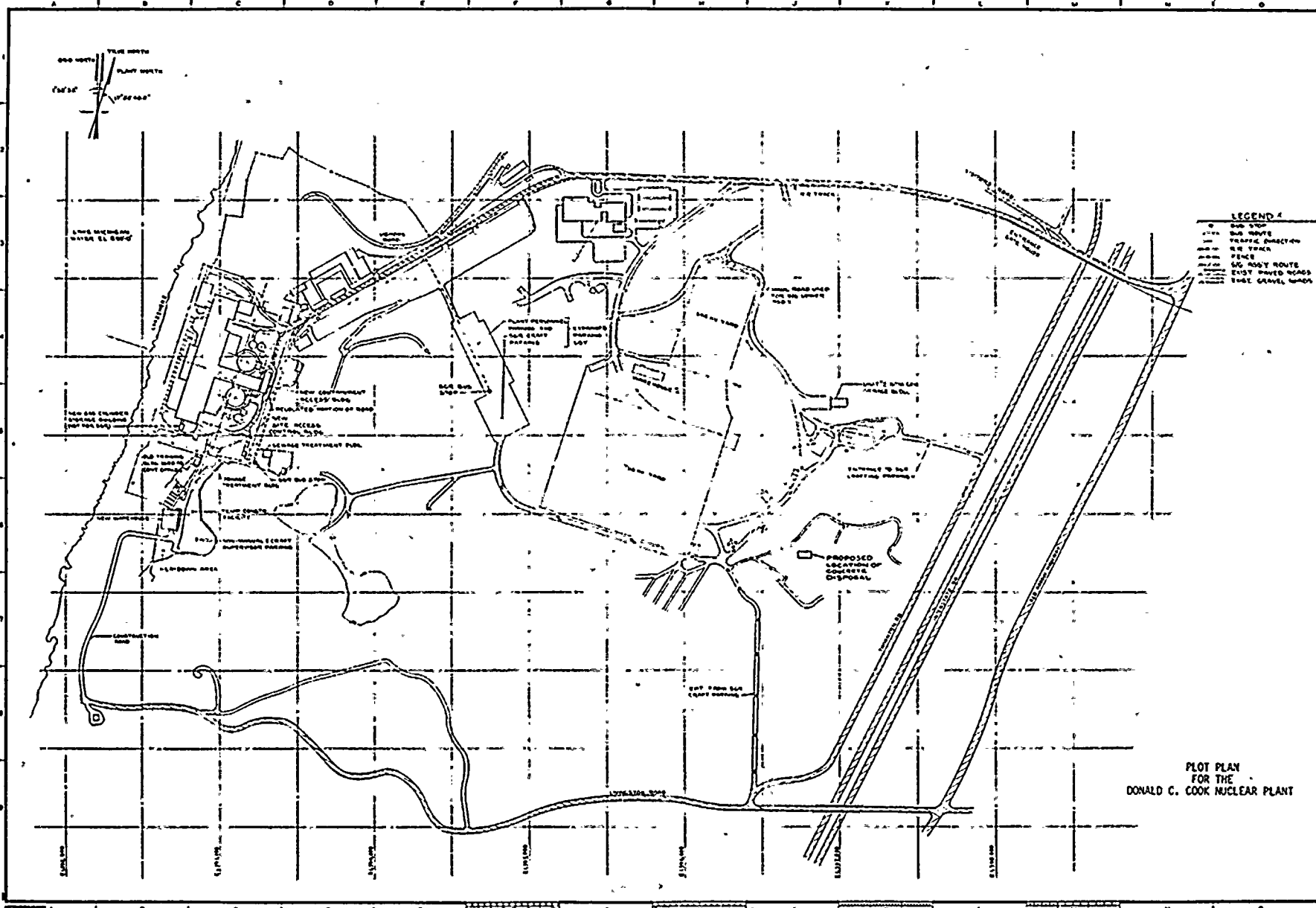
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PLOT PLAN
FOR THE
DONALD C. COOK NUCLEAR PLANT





- LEGEND**
- OLD ROAD
 - NEW ROAD
 - TRAFFIC DIRECTION
 - RAILROAD
 - FENCE
 - RAILROAD ROUTE
 - EXIST. PAVED ROADS
 - EXIST. GRAVEL ROADS



PLOT PLAN
 FOR THE
 DONALD C. COOK NUCLEAR PLANT

APPENDIX A

GAMMA SPEC. ANALYSIS OF CONCRETE

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Representative samples of the paint and concrete layers were sent to Controls for Environmental Pollution, Inc. (CEP) for radiological analysis. Controls for Environmental Pollution currently performs our Radiological Environmental Monitoring Program sampling and analysis, and is well qualified to perform radiological analysis of the concrete samples. The samples were analyzed on a Tracor Northern Computer Based Gamma Spectrometer which consists of a Tracor Northern TN-4500 Multichannel Analyzer equipped with:

- a) DEC LSI-11/23 Microprocessor
- b) DEC RT-11 Version IV Operating System
- c) Free Standing Console consisting of a full ASCII keyboard
- d) Comprehensive MCA Control Section
- e) Solid State Ge(Li) Detectors (2) and intrinsic HPGe Detectors (3), with the following operating respective characteristics:

Resolution (keV)	Efficiencies (%)
2.8	16.1
3.0	8.9
2.07	22.6
1.85	30.6
1.85	25.1

Concrete samples were counted for eight (8) hours on the above gamma spectrometer. Samples with the following lower limits of detectability being achieved:

Radionuclide	LLD (pCi/gm)
Ce-144	0.08
Ba-140	0.04
La-140	0.04
Cs-134	0.07
Rh-106	0.04
Cs-137	0.04
Zr-95	0.04
Nb-95	0.04
Mn-54	0.08
Fe-59	0.03
Zn-65	0.10
Co-60	0.08
Co-58	Not Listed

Analysis of concrete samples were performed in accordance with established procedures for analysis of sediment and other solid phase samples.

APPENDIX B

Donald C. Cook Nuclear Plant

Unit 2 Steam Generator Repair Project

Radiological Assessment: Concrete Disposal



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I. Basis

This study was performed to evaluate the radiological impact of on-site disposal of the concrete to be removed from the Donald C. Cook Nuclear Plant's Unit 2 steam generator doghouses during the upcoming Steam Generator Repair Project. This study consists of a determination of the environmental pathways through which radiological exposure could be expected to occur and an evaluation of the radiological consequences of the disposal of the concrete for each of the pathways considered. The following environmental pathways were considered:

- (1) External exposure from the concrete - occupational
- (2) External exposure from the concrete - intruder
- (3) External exposure from the concrete - intruder, following loss of institutional control
- (4) Internal exposure due to release of contaminants to surface water - ingestion of drinking water
- (5) Internal exposure due to release of contaminants to surface water - ingestion of fish and other aquatic foods
- (6) Internal exposure due to release of contaminants to ground water - ingestion of well water
- (7) Internal exposure due to agricultural activities on the disposal site following loss of institutional control - ingestion of vegetables, meat and dairy products
- (8) Internal exposure due to inhalation of resuspended contaminated concrete dusts - occupational

- (9) Internal exposure due to inhalation of resuspended contaminated concrete dusts - intruder following loss of institutional control.

Basic assumptions used in calculation of the source terms were:

- (1) Total radioactivity in the concrete was calculated assuming that the transport mechanism for the activity in the concrete is diffusion. It is also assumed that the activity levels are equal on both sides of the concrete.
- (2) For external exposures, the maximum concentration of each radionuclide was used as the basis for calculating the total activity and total external dose.
- (3) For internal exposures due to ingestion, it is assumed that the total activity present in the concrete was released to the pathway of interest.
- (4) For internal exposure due to inhalation, it is assumed that the total activity present on one side of the concrete is available for release to the atmosphere.

To conservatively account for the trace levels of contamination present in the steam generator doghouse concrete, all of the contamination is used at least five (5) times in determining potential radiological consequences of the disposal of the concrete:

- (1) External exposures
- (2) Internal exposure due to ingestion of surface water/fish and



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other aquatic foods taken from Lake Michigan

- (3) Internal exposures due to ingestion of ground water
- (4) Internal exposures due to the inhalation of concrete dusts containing the trace levels of contamination.
- (5) Internal exposures due to the ingestion of agricultural products grown on the disposal site after loss of institutional control.

Pathway specific assumptions are discussed below in more detail.

The calculational models used in this assessment are:

- (1) For external exposures, the concrete slabs were treated as half-cylinders with credit being taken for self shielding due to the finite thickness of the contaminated layers and the depth to which the inner layer of contamination is shielded by the thickness of the concrete
- (2) For internal exposures due to the ingestion of contaminated water and/or foodstuffs, those models specified in Regulatory Guide 1.109 were used with generic values used for model parameters. Note for those parameter values for which "NO DATA" was listed, a value of 0.00E+00 was assumed.
- (3) For internal exposures due to the inhalation of resuspended contaminated concrete dusts, a model was developed based on NUREG/CR-3332, Section 5.2.2.6



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II. Source Terms

During November of 1987, samples of the Unit 2 Steam Generator Doghouse concrete were obtained for radiological analysis. Listed below are the activity levels (on a picoCurie per gram basis) for the two one-sixteenth of an inch concrete layers (see Section 2.4 of the application for a discussion of the sampling and analysis program)

TABLE I

Sample Locations	Radionuclides	Activity Concentration	
		First Layer	Second Layer
		(pCi/gm)	(pCi/gm)
Top of Doghouse Enclosures			
Set #1	Co-60	4.40	1.90
	Cs-134	1.30	0.70
	Cs-137	13.20	7.70
Set #2	Co-60	1.20	0.20
	Cs-134	0.50	0.20
	Cs-137	4.30	1.60
Walls of Doghouse Enclosures			
Set #1	Co-60*	2.10	2.70
	Cs-134*	<LLD	0.40
	Cs-137*	0.40	0.90
Set #2	Co-60	8.90	0.50
	Cs-134	<LLD	<LLD
	Cs-137	9.40	0.70

*This sample shows anomalous results for the activity levels for the first and second layers of concrete. For conservatism, the values reported for these sample results have been reversed in calculating the diffusion constant for the radionuclides found in the concrete. For calculating dose consequences, the higher concentration of the two was used.



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Using the above data, an effective diffusion constant using Fick's Law for a one-dimensional situation was calculated. The effective diffusion constant for radioactivity in this concrete has a value of:

$$k = 4.63088 \pm 1.56597 \text{ cm}^{-1}$$

Individual values of k ranged from 1.58308 cm^{-1} to 18.13668 cm^{-1} . Using a critical value of four (4) standard deviations, it was possible to eliminate two of the individual calculated values of the effective diffusion constant as being excessively distant from the mean effective diffusion constant. Using the calculated value of the effective diffusion constant, the thickness of concrete at which the concentration of activity falls off by five orders of magnitude was determined to be 2.49 centimeters and this is the thickness at which effectively no activity remains in the concrete. Integrating the activity concentration over the above thickness, the total activity present in the concrete was determined and is reported in Section 2.3 of this report, Table I.

To calculate the areal concentration of each radionuclide, it was assumed that the minimum thickness of the steam generator doghouse concrete to be disposed of is two (2) feet and that the maximum mass of concrete that would be removed is $8.35\text{E}+08$ grams. By using these quantities, and knowing the density of concrete, it was found that the maximum surface



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10 area (one-sided) of concrete would be $5.89\text{E}+6$ square centimeters. This surface area is used in calculating the doses arising from external exposure, inhalation of resuspended particles and ingestion of food crops following loss of institutional control of the disposal site. The methods used in calculating these doses will be described in subsequent sections of this attachment.



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III. External Exposures: Occupational, Intruder, Intruder following loss of Institutional Control of Disposal Site

A. Assumptions

1. Duration of exposures

For the purpose of calculating the total dose to an individual, the following occupancy times were assumed.

- a. Occupational Exposure: 250 hours per year. This occupancy factor is assumed to cover the case of a worker visiting the disposal site once a day for an hour each day, five (5) days per week, for fifty (50) weeks per year. Assuming that a worker would regularly visit the disposal site for an hour each day conservatively estimates the time that a worker would spend in the area for purposes of security patrols.
- b. Inadvertent intruder: It is conservatively assumed that an Inadvertent intruder would remain undetected by the plant security patrols for a period of two weeks in which it is assumed that the intruder would remain at the disposal site on a continuous basis.
- c. Intruder following loss of institutional control of the disposal area: It is conservatively assumed that an individual would remain at the disposal site on a continuous basis for an entire year.

2. Activity levels



- a. Occupational and inadvertent intruder: It is conservatively assumed that the maximum activity level for each radionuclide is uniformly distributed in the outer 0.22 cm of each side of the concrete walls. No credit is taken for decay.
- b. Intruder following loss of institutional control of disposal site: It is conservatively assumed that the maximum activity level for each radionuclide is uniformly distributed in the outer 0.22 cm of each side of the concrete walls. A forty (40) year period is assumed before loss of institutional control of the disposal site occurs.

B. Model

The model used in calculating the external doses is that of a concrete half-cylinder. From Cember's Introduction to Health Physics, 2nd Edition, the equation for the dose rate from a cylinder is:

$$DR = \frac{\pi * \Gamma * C * (1 - e^{(-\lambda * t)})}{\lambda} * \ln \left(\frac{(R^2 + h^2)}{h^2} \right)$$

where: DR :is the dose rate in rem per hour

Γ :is the specific gamma ray constant in units of
Roentgens per Curie per hour at one meter



C_v :is the activity concentration in units of
Curies per cubic meter

μ :is the linear attenuation coefficient in terms
of inverse meters

t :is the thickness of the contaminated layer in
terms of centimeters

R :is the radius of the cylinder

h :is the height above the cylinder at which the
dose rate is being calculated and is
assumed to be one (1) meter

Now since both Γ and μ are both functions of energy, and since there are several different energies associated with the radionuclides of interest, it is necessary to determine the values of both of the above parameters as a function of energy. In order to calculate the values of the above parameters as a function of energy, a cubic spline curve fit to these parameters as a function of energy was utilized. Having determined the curves to be used for Γ and μ , the energy corrected values of Γ/μ were determined. Using this value of Γ/μ , and knowing the total maximum activity of each radionuclide, the surface area and the thickness of the contaminated layer; the value of the dose rate contribution from each radionuclide was calculated. The total dose rate is simply the sum of each of the individual radionuclide dose rates and the total dose is simply the total

dose rate multiplied by the occupancy times. The values of the linear attenuation coefficient as a function of energy were taken from the Radiological Health Handbook (after correcting for the density of concrete), and the values of the specific gamma ray constant were taken from Johns and Cunningham, Physics of Radiology, 4th Edition. The above calculation, however, only accounts for the dose rate due to the contamination present at the surface layer; for the back layer, the above equation is modified to account for the attenuation of the thickness of the concrete between the back layer and the individual being exposed and the increased distance (i. e., h value). Thus the correction factor for attenuation is simply:

$$CF = e^{(-\mu * (H - t))}$$

and the value of h in the above equation is replaced by (h + 2 feet). Applying these corrections will give us the dose contribution due to the contaminated back layer of the concrete. The total dose is the sum of the doses from both the front and back layers. Now the above equation gives the dose rate for a cylinder, and since a half-cylinder geometry was assumed, it is necessary to divide the above results by two, to correct for the difference in geometry.

C. Input Values: For a listing of the input parameters, see pages

一、二、三、四、五、六、七、八、九、十、十一、十二、十三、十四、十五、十六、十七、十八、十九、二十、二十一、二十二、二十三、二十四、二十五、二十六、二十七、二十八、二十九、三十、三十一、三十二、三十三、三十四、三十五、三十六、三十七、三十八、三十九、四十、四十一、四十二、四十三、四十四、四十五、四十六、四十七、四十八、四十九、五十、五十一、五十二、五十三、五十四、五十五、五十六、五十七、五十八、五十九、六十、六十一、六十二、六十三、六十四、六十五、六十六、六十七、六十八、六十九、七十、七十一、七十二、七十三、七十四、七十五、七十六、七十七、七十八、七十九、八十、八十一、八十二、八十三、八十四、八十五、八十六、八十七、八十八、八十九、九十、九十一、九十二、九十三、九十四、九十五、九十六、九十七、九十八、九十九、一百。

29 to 33.

1. Surface area
2. Total maximum activity for each radionuclide
3. Thickness of contaminated concrete layer assuming uniform activity concentration
4. Gamma ray energies and intensities for each radionuclide
(Note: for Cs-137, the gamma ray energy for the Ba137m daughter is used, the intensity of this gamma ray is corrected for the fraction of Cs-137 decays which result in the formation of the Ba-137m daughter)
5. Specific gamma ray constants and mass attenuation coefficients as a function of energy.
6. Density of concrete
7. Thickness of concrete walls
8. Occupancy factors

D. Calculation results: Annual Dose

1. Occupational exposure: Dose = 0.102 mrem
2. Inadvertent intruder: Dose = 0.138 mrem
3. Intruder following loss of institutional control:
Dose = 0.771 mrem



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IV. Internal Exposures: Releases to surface waters - Doses due to ingestion of drinking water and consumption of fish

A. Assumptions:

1. Quantities consumed

- a. For the purpose of calculating the total dose to an individual from the ingestion of drinking water taken from the plume of the discharge, it is assumed that a volume of drinking water corresponding to a one (1) day's supply of the maximally exposed individuals total water intake is consumed.
- b. For the purpose of calculating the total dose to an individual from the ingestion of fish and other aquatic foods taken from the plume, it is assumed that the total quantity of the maximally exposed individual's annual intake of fish and other aquatic foods are taken from the plume.

2. Activity levels

- a. For the purposes of these calculations, credit is taken for dilution of the discharge by Lake Michigan. The dilution factor was calculated using the methodology of Regulatory Guide 1.113 for a transient release. For purposes of conservatism, it is assumed that the discharge point and the drinking water intake both lie in the plume centerline.



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- b. The quantity of radioactive material released to Lake Michigan is the total activity contained on both sides of the concrete walls. Activity levels are based upon the mean activity levels found in the concrete samples.
- c. No credit is taken for decay.

B. Drinking water

1. Model

For calculating the doses from the consumption of drinking water taken from the plume, it is necessary to calculate the concentration of each radionuclide in the water.

Since the activity in the concrete would be essentially in the solid phase when it would be released to Lake Michigan, it is necessary to calculate the volume of water into which the activity would be deposited. Using the equation below (taken from Regulatory Guide 1.113):

$$\text{Vol} = \frac{4 \pi t d (K_x K_y)^{1/2}}{e^{-\left\{ \frac{(x_o - u t)^2}{4 K_x t} \right\}} \left[e^{-\left\{ \frac{(y_o - y_s)^2}{4 K_y t} \right\}} + e^{-\left\{ \frac{(y_o + y_s)^2}{4 K_y t} \right\}} \right]}$$

where: Vol :is the dilution volume due to Lake Michigan

Xo,Yo :are the coordinates of the nearest public water intake



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Ys :is the is the location of the
discharge location

u :is the current velocity

t :is time required for a parcel of
water to travel from the point of
discharge to the intake

d :is the depth of the nearest drinking
water intake

Ky,Kx :are turbulence factors

Simplifying the above equation, the diffusion volume is
found to be given by:

$$\text{Vol} = 2 * \pi * t * u^2 * (Bx * By)^{0.5}$$

where t and u are as defined above, and

Bx, By are turbulence factors

Solving this equation, our dilution volume is found to be
6.26E+09 milliliters. Using this value as our dilution
volume and using the total activity calculated for each
radionuclide (based on the mean activity for each of the
various radionuclides), the following radionuclide
concentrations for water are obtained:



TABLE II

Radionuclide	Activity (μ Ci)	Water Concentration (μ Ci per cc)	FMPC
Co-60	7.84	1.25E-09	0.00004
Cs-134	1.92	3.07E-10	0.00003
Cs-137	15.38	2.46E-09	0.00012

where: FMPC in the above table is the Fractional Maximum Permissible Concentration and is given by the equation:

$$FMPC(i) = \frac{Act(i)}{MPC(i)}$$

where: Act(i) :is the concentration in water of the ith radionuclide
MPC(i) :is the maximum permissible concentration in water of radionuclide "i". The MPC value is taken from 10 CFR 20, Appendix B, Table 2, Column II.
FMPC(i) :is the fractional maximum permissible concentration for the ith radionuclide in water

The model used to calculate the radiological doses due to the ingestion of contaminated drinking water is taken from Regulatory Guide 1.109 and is defined by the equation:

$$Dose(i,o) = 1100 * Uap * Mp * Q(i) * DF(i,o) / F$$

where: Dose(i,o) :is the annual dose to organ "o" from radionuclide "i"



U_{ap} :is the total water intake during the time for
 which the plume is at the water intake
 M_p :is the mixing fraction, (i. e., the inverse
 of the dilution volume)
 $Q(i)$:is the quantity of radionuclide "i" released
 to Lake Michigan during the year
 $DF(i,o)$:is the dose factor for organ "o" from
 radionuclide "i"
 F :is the flowrate of the effluent stream

Now the quantity $M_p * Q(i)$ is simply the water concentration of radionuclide "i" calculated above.

2. Input Parameters: For a listing of input parameters, see pages 34 to 36.
 - a. Distance to nearest drinking water intake (Distance to Lake Township water intake is 2800 ft)
 - b. Shear velocity for Lake Michigan waters at Cook Plant (assumed to be 1 centimeter per second)
 - c. Depth of public water intake (assumed to be 1 meter)
 - d. Water consumption rates per R. G. 1.109, p.33
 - e. Ingestion dose factors for various critical organs for various populations (adult, teenager, child, infant) for different radionuclides of interest per R. G. 1.109



f. Total activity levels for radionuclides found in the concrete

3. Calculation results: The doses calculated using this methodology are attached to this document. See pages 37.

C. Fish Consumption

1. Model: The model used for the calculation is essentially the same as that used for the calculation of doses due to the ingestion of drinking water. The one difference in the calculation of doses due to fish ingestion is the inclusion of the bioaccumulation factors for the various elements of interest. Thus the Dose equation given above is modified to read:

$$\text{Dose}(i,o) = 1100 * U_{ap} * M_p * Q(i) * BF(i) * DF(i,o) / F$$

where: the terms $\text{Dose}(i,o)$, M_p , $Q(i)$, $DF(i,o)$ and F are as defined above

U_{ap} : is the quantity of fish and other aquatic foods consumed on an annual basis for the maximally exposed individual

$BF(i)$: is the bioaccumulation factor for radionuclide "i" in the tissue of fish

2. Input parameters: For a listing of the input parameters, see pages 38 to 40.

Parameters a - c, e, and f are the same as above for ingestion of drinking water

d. Fish/Aquatic food annual ingestion rates for maximally exposed individual per mR. G. 1.109, p.33.

g. Bioaccumulation factors per R. G. 1.109 for fish

3. Calculation results: The doses calculated for consumption of fish taken from the discharge plume are attached to this document. See page 41.

V. Internal Exposures: Release to ground water - Doses due to the ingestion of well water

A. Assumptions:

1. For purposes of calculating the doses due to the ingestion of well water, it is assumed that the volume of water consumed is that which would be normally consumed by the maximally exposed individual in each age group (adult, teenager, child, and infant) during a full year.
2. It is assumed that the well will supply water for a family consisting of two adults, one teenager, one child, and one infant for an entire year before being exhausted.
3. The quantity of radioactive material released to the ground water is assumed to be the total activity of each radionuclide calculated using the mean concentration of each radionuclide.
4. No credit was taken for decay

B. Model

1. The model used to determine the dose due to the ingestion of ground water is that given in Regulatory Guide 1.109 for the ingestion of water, as indicated below:

$$\text{Dose}(i,o) = 1100 * U_{ap} * M_p * Q(i) * DF(i,o) / F$$

where: $\text{Dose}(i,o)$: is the annual dose to organ "o" due to discharge of radionuclide "i"

U_{ap} :is the annual intake of water for the
maximally exposed individual
 M_p :is the mixing fraction (i. e., the
reciprocal of the total dilution volume)
 $Q(i)$:is the total quantity of radionuclide "i"
discharged during a period of one year
via the concrete
 $DF(i,o)$:is the dose factor for organ "o" due to
the ingestion of radionuclide "i"

2. Input parameters: For a listing of the input parameters for the calculation of internal doses due to consumption of ground water, see pages 42 to 44.
 - a. Total activity levels for each radionuclide of interest
 - b. Water consumption rates per R. G. 1.109, p.33.
 - c. Ingestion dose factors for various critical organs for various populations
3. Calculation results: The doses calculated using the above methodology are attached to this document. See pages 45.

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VI. Internal Exposures: Releases to the soil - Doses due to the ingestion of agricultural products grown at the disposal site following loss of institutional control.

A. Assumptions:

1. For purposes of calculating the doses due to the ingestion of food products grown at the disposal site following loss of institutional control, it is conservatively assumed that all of an individual's dietary needs are derived from the food products derived from this area.
2. The quantity of radioactive material released to the soil is assumed to be the total activity of each radionuclide in the concrete. The total activity being calculated using the mean concentration of all concrete samples taken.
3. It is assumed that the activity is uniformly distributed throughout the top fifteen (15) centimeters of the soil, over an area which corresponds to the maximum surface area of the concrete
4. It is assumed that loss of institutional control of the disposal area occurs forty (40) years after the concrete is placed at the disposal area.

B. Model

1. The model used for calculating the doses due to ingestion of food products grown at the disposal site

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following loss of institutional control is that given in Regulatory Guide 1.109.

2. To calculate the quantity of radioactive material that will be in each of the ingestion pathways (vegetable, meat, and dairy products), the following equations are used:

Soil Concentration (SConc):

$$SConc = \frac{Act * DF}{Density (Soil) * Area}$$

Vegetable Concentration (VConc)

$$VConc = SConc * TFsv$$

Meat Concentration (MConc)

$$MConc = VConc * TFvm * F$$

Dairy product Concentration (DConc)

$$DConc = VConc * TFvd * F$$

where: Act :is the total activity of a radio-nuclide present in the concrete at the time of removal from the steam generator doghouses

DF :is the decay correction factor

$$DF = e^{-(40 \text{ years} * \ln(2) / T)}$$

T :is the half-life of the
radionuclide of concern

Density (Soil) :is the areal density of
soil (240 kg per square meter)

Regulatory Guide 1.109

Area :is the maximum surface area of the
removed concrete

TFsv :is the radionuclide transfer
function from soil to vegetable
matter

TFvm :is the radionuclide transfer
function from vegetable matter
to meat

TFvd :is the radionuclide transfer
function from vegetable matter
to milk

F :is the quantity of feed taken in by
cattle / milk cows

Using the above equations and the appropriate
transfer function and feed intake values, the
equilibrium concentration of each of the
radionuclides in each of the three agricultural
pathways are calculated.



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3. To calculate the doses due to ingestion of these above agricultural products, the equation listed below is used:

$$VDose(o,i) = Iv * VConc(i) * DF(o,i)$$

$$MDose(o,i) = Im * MConc(i) * DF(o,i)$$

$$DDose(o,i) = Id * DConc(i) * DF(o,i)$$

$$IDose(o,i) = VDose(o,i) + MDose(o,i) + DDose(o,i)$$

where:

$VDose(o,i)$, $MDose(o,i)$, $DDose(o,i)$:is the dose to organ "o" from radionuclide "i" ingested via the vegetable, meat, dairy product pathway.

Iv is the total vegetable, meat, dairy product intake for the maximally exposed individual

$VConc(i)$, $MConc(i)$, $DConc(i)$:is the concentration of radionuclide "i" in vegetable matter, meat, dairy products

$DF(o,i)$:is the ingestion dose factor for organ "o" due to radionuclide "i"

$IDose(o,i)$:is the total ingestion dose to organ



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"o" from radionuclide "i" from the ingestion of vegetable matter, meat, and dairy products.

C. Input parameters: For a listing of the input parameters, see pages 46 to 50.

1. Total Activity levels for radionuclides of interest
2. Half-lives (or decay corrections) for radionuclides of interest
3. Areal soil density
4. Maximum surface area of concrete (soil)
5. Radionuclide transfer functions
 - a. Soil to vegetable matter
 - b. vegetable matter to meat
 - c. vegetable matter to milk
6. Animal feed rates
7. Annual intake quantities for the maximally exposed individual
 - a. Vegetable matter
 - b. Meat
 - c. Milk
8. Radionuclide ingestion dose factors for critical organs

D. Results: See pages 51 to 54 for the results of the dose calculations for ingestion of agricultural products.

VII. Internal Doses: Occupational and Intruder Inhalation doses

A. Assumptions

1. For purposes of calculating the internal doses arising from the inhalation of contaminated concrete dusts, it is assumed that the total activity on one face of the concrete slab will go airborne.
2. No credit is taken for decay
3. Exposure times are assumed to be:
 - a. Occupational exposure: 24 hours
 - b. Intruder exposure: 1 year.
4. A resuspension factor of 0.0001 per meter, the most conservative value of those listed in NUREG/CR-3332.

B. Model

Using Equation 5.27 of NUREG/CR-3332:

$$X(i) = K * AConc(i) * F$$

where: $X(i)$:is the airborne concentration of radionuclide "i"

K :is the assumed resuspension factor

$AConc(i)$:is the areal concentration of radionuclide "i"

F :is the fraction of the activity that is available to go airborne

To determine the dose due to inhalation of radioactive material, the following equation from Regulatory Guide 1.109 is used:

$$\text{Dose}(i,o) = I_a * X(i) * \text{DF}(i,o)$$

where: $\text{Dose}(i,o)$:is the dose to organ "o" from the inhalation of radionuclide "i"

I_a :is the quantity of air inhaled over the period of exposure by the maximally exposed individual

$X(i)$:is the airborne concentration of radionuclide "i"

$\text{DF}(i,o)$:is the inhalation dose factor for organ "o" from radionuclide "i" for the exposed individual.

C. Input Data: For a listing of the input data, see pages 55 to 57 of this report.

1. Total activity levels for each radionuclide
2. Maximum surface area of concrete
3. Resuspension factor
4. Fraction of activity available for resuspension
5. Air intake quantities for various populations of interest
6. Exposure times
7. Radionuclide inhalation dose factors for critical organs

D. Calculation results: The doses calculated for inhalation of contaminated concrete dusts are attached to this document.
See pages 58 to 59.

INPUT DATA FOR CALCULATING THE EXTERNAL EXPOSURE DOSES

Attenuation Coefficient Curve

Isotopic Attenuation Coefficients

μ_a μ_m

10^{-2} Mev	$6.25425 \cdot 10^{-1}$ m
$1.5 \cdot 10^{-2}$ Mev	$1.9158 \cdot 10^{-1}$ m
$2 \cdot 10^{-2}$ Mev	$8.34675 \cdot 10^{-2}$ m
$3 \cdot 10^{-2}$ Mev	$2.76675 \cdot 10^{-2}$ m
$4 \cdot 10^{-2}$ Mev	$1.40663 \cdot 10^{-2}$ m
$5 \cdot 10^{-2}$ Mev	$9.114 \cdot 10^{-3}$ m
$6 \cdot 10^{-2}$ Mev	$6.85875 \cdot 10^{-3}$ m
$8 \cdot 10^{-2}$ Mev	$4.95225 \cdot 10^{-3}$ m
$1 \cdot 10^{-1}$ Mev	$4.16175 \cdot 10^{-3}$ m
$1.5 \cdot 10^{-1}$ Mev	$3.348 \cdot 10^{-3}$ m
$2 \cdot 10^{-1}$ Mev	$2.95275 \cdot 10^{-3}$ m
$3 \cdot 10^{-1}$ Mev	$2.511 \cdot 10^{-3}$ m
$4 \cdot 10^{-1}$ Mev	$2.23898 \cdot 10^{-3}$ m
$5 \cdot 10^{-1}$ Mev	$2.03903 \cdot 10^{-3}$ m
$6 \cdot 10^{-1}$ Mev	$1.88325 \cdot 10^{-3}$ m
$8 \cdot 10^{-1}$ Mev	$1.64843 \cdot 10^{-3}$ m
1 Mev	$1.48103 \cdot 10^{-3}$ m
1.5 Mev	$1.20668 \cdot 10^{-3}$ m
2 Mev	$1.0416 \cdot 10^{-3}$ m
3 Mev	$8.48625 \cdot 10^{-4}$ m

For Co-60

$E0$	$\mu m0$
1.173 Mev	$1.36783 \cdot 10^{-1}$ m
1.332 Mev	$1.28225 \cdot 10^{-1}$ m

For Cs-134

$E1$	$\mu m1$
$5.63227 \cdot 10^{-1}$ Mev	$1.93668 \cdot 10^{-1}$ m
$5.69315 \cdot 10^{-1}$ Mev	$1.92756 \cdot 10^{-1}$ m
$6.04699 \cdot 10^{-1}$ Mev	$1.87669 \cdot 10^{-1}$ m
$7.95845 \cdot 10^{-1}$ Mev	$1.6525 \cdot 10^{-1}$ m
$8.01932 \cdot 10^{-1}$ Mev	$1.64654 \cdot 10^{-1}$ m
1.03857 Mev	$1.45373 \cdot 10^{-1}$ m
1.16794 Mev	$1.37082 \cdot 10^{-1}$ m
1.36515 Mev	$1.26627 \cdot 10^{-1}$ m
$2.769 \cdot 10^{-1}$ Mev	$2.58831 \cdot 10^{-1}$ m

For Cs-137

$$E2 = 6.61649 \cdot 10^{-1} \text{ Mev}$$

$$\mu m2 = 1.80156 \cdot 10^{-1} \text{ m}$$



SPECIFIC GAMMA RAY CONSTANT CURVE

E_1 k	Γ_1 k	E_2 k	Γ_2 k
0.001 Mev	71.6 Rem/hr · m · Ci	0.08 Mev	0.004 Rem/hr · m · Ci
0.0015 Mev	0.3592 Rem/hr · m · Ci	0.1 Mev	0.0273 Rem/hr · m · Ci
0.002 Mev	21.16 Rem/hr · m · Ci	0.15 Mev	0.0507 Rem/hr · m · Ci
0.003 Mev	9.641 Rem/hr · m · Ci	0.2 Mev	0.34 Rem/hr · m · Ci
0.004 Mev	6.027 Rem/hr · m · Ci	0.3 Mev	0.3827 Rem/hr · m · Ci
0.005 Mev	6.834 Rem/hr · m · Ci	0.4 Mev	0.0394 Rem/hr · m · Ci
0.006 Mev	2.629 Rem/hr · m · Ci	0.5 Mev	0.0056 Rem/hr · m · Ci
0.008 Mev	1.43 Rem/hr · m · Ci	0.6 Mev	0.0111 Rem/hr · m · Ci
0.01 Mev	0.8839 Rem/hr · m · Ci	0.662 Mev	0.0211 Rem/hr · m · Ci
0.015 Mev	0.3633 Rem/hr · m · Ci	0.8 Mev	6.1362 10^{-5} Rem/hr · m · Ci
0.02 Mev	0.1928 Rem/hr · m · Ci	1 Mev	0.5442 Rem/hr · m · Ci
0.03 Mev	0.0816 Rem/hr · m · Ci	1.25 Mev	0.6501 Rem/hr · m · Ci
0.04 Mev	0.0488 Rem/hr · m · Ci	1.5 Mev	0.7459 Rem/hr · m · Ci
0.05 Mev	0.0373 Rem/hr · m · Ci	2 Mev	0.9157 Rem/hr · m · Ci
0.06 Mev	0.0339 Rem/hr · m · Ci	3 Mev	1.205 Rem/hr · m · Ci

ISOTOPIC SPECIFIC GAMMA RAY CONSTANTS

For Co-60

E_0 j0	Γ_0 j0
1.173 Mev	0.6187 Rem/hr · m · Ci
1.332 Mev	0.6825 Rem/hr · m · Ci

For Cs-137

$$E_1 = 0.6616 \text{ Mev}$$

$$\Gamma_1 = 0.3592 \text{ Rem/hr · m · Ci}$$



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For Cs-134

E2 j2		r 2 j2	
0.4754 Mev	1	0.004 Rem/hr · m · Ci	1 2 -1
0.5632 Mev	1	0.0273 Rem/hr · m · Ci	1 2 -1
0.5693 Mev	1	0.0507 Rem/hr · m · Ci	1 2 -1
0.6047 Mev	1	0.34 Rem/hr · m · Ci	1 2 -1
0.7958 Mev	1	0.3827 Rem/hr · m · Ci	1 2 -1
0.8019 Mev	1	0.0394 Rem/hr · m · Ci	1 2 -1
1.0386 Mev	1	0.0056 Rem/hr · m · Ci	1 2 -1
1.1679 Mev	1	0.0111 Rem/hr · m · Ci	1 2 -1
1.3652 Mev	1	0.0211 Rem/hr · m · Ci	1 2 -1
0.2769 Mev	1	6.1362 10 ⁻⁵ Rem/hr · m · Ci	-5 1 2 -1

For Co 60

Eo j1	r o1 j1	r lo j1
1.173 MeV ¹	-3 1 3 -1 1.31658 10 · Rem/hr · m · Ci	-7 1 3 -1 3.2435 10 · Rem/hr · m · Ci
1.332 MeV ¹	-3 1 3 -1 1.45353 10 · Rem/hr · m · Ci	-7 1 3 -1 6.02194 10 · Rem/hr · m · Ci

For Cs-134

E2 j2	r o2 j2	r 2o j2
0.47535 MeV ¹	-6 1 3 -1 8.48145 10 · Rem/hr · m · Ci	-11 1 3 -1 2.70778 10 · Rem/hr · m · Ci
0.56323 MeV ¹	-5 1 3 -1 5.76306 10 · Rem/hr · m · Ci	-10 1 3 -1 4.48272 10 · Rem/hr · m · Ci
0.56932 MeV ¹	-4 1 3 -1 1.07236 10 · Rem/hr · m · Ci	-10 1 3 -1 8.81633 10 · Rem/hr · m · Ci
0.6047 MeV ¹	-4 1 3 -1 7.19433 10 · Rem/hr · m · Ci	-9 1 3 -1 8.05613 10 · Rem/hr · m · Ci
0.79585 MeV ¹	-4 1 3 -1 8.11729 10 · Rem/hr · m · Ci	-8 1 3 -1 3.54802 10 · Rem/hr · m · Ci
0.80193 MeV ¹	-5 1 3 -1 8.35348 10 · Rem/hr · m · Ci	-9 1 3 -1 3.78582 10 · Rem/hr · m · Ci
0.03857 MeV ¹	-5 1 3 -1 1.1934 10 · Rem/hr · m · Ci	-9 1 3 -1 1.74472 10 · Rem/hr · m · Ci
1.16794 MeV ¹	-5 1 3 -1 2.36174 10 · Rem/hr · m · Ci	-9 1 3 -1 5.71356 10 · Rem/hr · m · Ci
1.36515 MeV ¹	-5 1 3 -1 4.50247 10 · Rem/hr · m · Ci	-8 1 3 -1 2.05556 10 · Rem/hr · m · Ci
0.2769 MeV ¹	-7 1 3 -1 1.28869 10 · Rem/hr · m · Ci	-14 1 3 -1 1.91416 10 · Rem/hr · m · Ci

For Cs-137

$$\begin{aligned}
 E1 &= 0.66165 \text{ MeV} \\
 r o3 &= 7.60776 \cdot 10^{-4} \cdot \text{Rem/hr} \cdot \text{m} \cdot \text{Ci} \\
 r 3o &= 1.34463 \cdot 10^{-8} \cdot \text{Rem/hr} \cdot \text{m} \cdot \text{Ci}
 \end{aligned}$$



1

2

3

4



5

6



Equations used in the Calculation of the shine dose.

$$\mu_{mj} := \text{interp}[\text{Att}, \text{Eatt}, \mu_m, E_j] \quad \text{attenuation coefficient}$$

$$\Gamma_j := \text{interp}[C, \text{Eref}, \Gamma_o, E_j] \cdot I_j \quad \text{specific gamma ray constant}$$

$$r_{oj} := \frac{\Gamma_j}{\mu_{mj}} \left[1 - e^{-\mu_{mj} \cdot t} \right] \quad \text{dose rate contribution per unit activity concentration for the front wall of the steam generator doghouse}$$

$$r_{lj} := \frac{\Gamma_j}{\mu_{mj}} \left[e^{-\mu_{mj} \cdot (H-t)} - e^{-\mu_{mj} \cdot H} \right] \quad \text{dose rate contribution per unit activity concentration for the back wall of the steam generator doghouse}$$

$$DR := \frac{\pi}{2} \cdot \text{Conc} \cdot 10^3 \cdot \left[\ln \left[\left(\frac{r}{m} \right)^2 + 1 \right] \cdot \sum_j r_{oj} + \ln \left[\frac{r^2 + (l \cdot m + H)^2}{(l \cdot m + H)^2} \right] \cdot \sum_j r_{lj} \right]$$

Dose rate contribution for a particular radionuclide for a half-cylinder.



0
12
24
36
48

60
72
84
96
108



120
132
144

156

168

180

192



INPUT DATA FOR CALCULATION OF DOSES DUE TO DRINKING WATER INGESTION

TOTAL ACTIVITY

Radionuclide

Inv

Co-60

Cs-134

Cs-137

j		
-6	1	
7.83825	10	Ci
-6	1	
1.92259	10	Ci
-5	1	
1.53807	10	Ci

DILUTION FACTOR CALCULATIONS

Lake Michigan Shear Velocity: $u := 1 \frac{\text{cm}}{\text{sec}}$ $\text{Vol} := 2 \pi \cdot t \cdot u \cdot d^2 \cdot (Bx \cdot By)^{0.5}$

Distance to Nearest Public Water Intake $X := 2800 \text{ ft}$ $\text{Vol} = 6.26245 \cdot 10^9 \cdot \text{cm}^3$

Assumed Depth of Nearest Public Water Intake $d := 1 \text{ m}$ $\text{Mp} := \text{Vol}^{-1}$

Turbulence Factors: $Bx := 5.93$ $\text{Mp} = 1.59682 \cdot 10^{-10} \cdot \text{cm}^{-3}$

$By := 0.23$

Time Required for Transit from Discharge to Nearest Public Water Intake $t = 8.5344 \cdot 10^4 \cdot \text{second}^1$

DRINKING WATER CONSUMPTION QUANTITY

ACTIVITY CONCENTRATIONS

Population

Ulap :=
i

Infant

Child

Teenager

Adult

i		
3		
330	10	cc
3		
510	10	cc
3		
510	10	cc
3		
730	10	cc

Radionuclide

Co-60

Cs-134

Cs-137

WATER

WConc

j		
-15	-3	1
1.25163	10	cm · Ci
-16	-3	1
3.07003	10	cm · Ci
-15	-3	1
2.45602	10	cm · Ci



Dose Factors for an Adult

Critical Organ	DFaCo60 := k	DFaCs134 := k	DFaCs137 := k
Bone	0.00 10 ⁰	6.22 10 ⁻⁵	7.97 10 ⁻⁵
Liver	2.14 10 ⁻⁶	1.48 10 ⁻⁴	1.09 10 ⁻⁴
Total Body	4.72 10 ⁻⁶	1.21 10 ⁻⁴	7.14 10 ⁻⁵
Thyroid	0.00 10 ⁰	0.00 10 ⁰	0.00 10 ⁰
Kidney	0.00 10 ⁰	4.79 10 ⁻⁵	3.70 10 ⁻⁵
Lung	0.00 10 ⁰	1.59 10 ⁻⁵	1.23 10 ⁻⁵
GI - LLI	4.02 10 ⁻⁵	2.59 10 ⁻⁶	2.11 10 ⁻⁶

Dose Factors for a Teenager

Critical Organ	DFtCo60 := k	DFtCs134 := k	DFtCs137 := k
Bone	0.00 10 ⁰	8.37 10 ⁻⁵	1.12 10 ⁻⁴
Liver	2.81 10 ⁻⁶	1.97 10 ⁻⁴	1.49 10 ⁻⁴
Total Body	6.33 10 ⁻⁶	9.14 10 ⁻⁵	5.19 10 ⁻⁵
Thyroid	0.00 10 ⁰	0.00 10 ⁰	0.00 10 ⁰
Kidney	0.00 10 ⁰	6.26 10 ⁻⁵	5.07 10 ⁻⁵
Lung	0.00 10 ⁰	2.39 10 ⁻⁵	1.97 10 ⁻⁵
GI - LLI	3.66 10 ⁻⁵	2.45 10 ⁻⁶	2.12 10 ⁻⁶

Dose Factors for a Child

Critical Organ	DFcCo60 := k	DFcCs134 := k	DFcCs137 := k
Bone	0.00 10 ⁰	2.34 10 ⁻⁴	3.27 10 ⁻⁴
Liver	5.29 10 ⁻⁶	3.84 10 ⁻⁴	3.13 10 ⁻⁴
Total Body	1.56 10 ⁻⁵	8.10 10 ⁻⁵	4.62 10 ⁻⁵
Thyroid	0.00 10 ⁰	0.00 10 ⁰	0.00 10 ⁰
Kidney	0.00 10 ⁰	1.19 10 ⁻⁴	1.02 10 ⁻⁴
Lung	0.00 10 ⁰	4.27 10 ⁻⁵	3.67 10 ⁻⁵
GI - LLI	2.93 10 ⁻⁵	2.07 10 ⁻⁶	1.96 10 ⁻⁶



Dose Factors for an Infant

Critical Organ	DFiCo60 := k	DFiCs134 := k	DFiCs137 := k
Bone	$0.00 \cdot 10^0$	$3.77 \cdot 10^{-4}$	$5.22 \cdot 10^{-4}$
Liver	$1.08 \cdot 10^{-5}$	$7.03 \cdot 10^{-4}$	$6.11 \cdot 10^{-4}$
Total Body	$2.55 \cdot 10^{-5}$	$7.10 \cdot 10^{-5}$	$4.33 \cdot 10^{-5}$
Thyroid	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$
Kidney	$0.00 \cdot 10^0$	$1.81 \cdot 10^{-4}$	$1.64 \cdot 10^{-4}$
Lung	$0.00 \cdot 10^0$	$7.42 \cdot 10^{-5}$	$6.64 \cdot 10^{-5}$
GI - LLI	$2.57 \cdot 10^{-5}$	$1.91 \cdot 10^{-6}$	$1.91 \cdot 10^{-6}$

DOSE EQUATIONS FOR THE VARIOUS POPULATIONS

$$ADose_k := 1100 \text{ Ulap} \cdot \left[\frac{FConc \cdot DFaCo60}{3} + \frac{FConc \cdot DFaCs134}{1} + \frac{FConc \cdot DFaCs137}{2} \right] \cdot R_k$$

$$TDose_k := 1100 \text{ Ulap} \cdot \left[\frac{FConc \cdot DFtCo60}{2} + \frac{FConc \cdot DFtCs134}{1} + \frac{FConc \cdot DFtCs137}{2} \right] \cdot R_k$$

$$LDose_k := 1100 \text{ Ulap} \cdot \left[\frac{FConc \cdot DFcCo60}{1} + \frac{FConc \cdot DFcCs134}{1} + \frac{FConc \cdot DFcCs137}{2} \right] \cdot R_k$$

$$IDose_k := 1100 \text{ Ulap} \cdot \left[\frac{FConc \cdot DFiCo60}{0} + \frac{FConc \cdot DFiCs134}{1} + \frac{FConc \cdot DFiCs137}{2} \right] \cdot R_k$$



DOSES (in mRem per year) DUE TO THE INGESTION OF WATER

Critical Organ	Adult Dose		Teenager Dose	
	ADose k		TDose k	
Bone	-16 4.72326 10 · mrem/year	1	-16 4.61964 10 · mrem/year	1
Liver	-16 6.94331 10 · mrem/year	1	-16 6.60366 10 · mrem/year	1
Total Body	-16 4.80184 10 · mrem/year	1	-16 2.51049 10 · mrem/year	1
Thyroid	1 0 mrem/year		1 0 mrem/year	
Kidney	-16 2.32113 10 · mrem/year	1	-16 2.20773 10 · mrem/year	1
Lung	-17 7.71461 10 · mrem/year	1	-17 8.55838 10 · mrem/year	1
GI - LLI	-16 1.23759 10 · mrem/year	1	-17 7.9513 10 · mrem/year	1

Critical Organ	Child Dose		Infant Dose	
	CDose k		IDose k	
Bone	-15 1.34388 10 · mrem/year	1	-15 1.38917 10 · mrem/year	1
Liver	-15 1.37197 10 · mrem/year	1	-15 1.71931 10 · mrem/year	1
Total Body	-16 2.42464 10 · mrem/year	1	-16 1.59073 10 · mrem/year	1
Thyroid	1 0 mrem/year		1 0 mrem/year	
Kidney	-16 4.40886 10 · mrem/year	1	-16 4.55532 10 · mrem/year	1
Lung	-16 1.58578 10 · mrem/year	1	-16 1.84715 10 · mrem/year	1
GI - LLI	-17 6.46966 10 · mrem/year	1	-17 3.72135 10 · mrem/year	1

The doses (in millirem) calculated above correspond to the annual dose one would receive from drinking water contaminated with the runoff from the doghouse concrete for a period of one day. This assumption is very conservative in that we assume that all of the radioactive nuclides are going to be leached out of the concrete, none of the radionuclides will be absorbed by the sandy soil, and all of the radionuclides will be washed to Lake Michigan in a single day to form a plume which will not be diluted within that 24 hours.

INPUT DATA FOR CALCULATION OF DOSES DUE TO FISH/AQUATIC FOODS INGESTION

	TOTAL ACTIVITY	BIOACCUMULATION FACTOR
		FISH
Radionuclide	Inv	BioFac
	j	j
	-6 1	1
Co-60	7.83825 10 · Ci	5 10
	-6 1	3
Cs-134	1.92259 10 · Ci	2 10
	-5 1	3
Cs-137	1.53807 10 · Ci	2 10

DILUTION FACTOR CALCULATIONS

Lake Michigan Shear Velocity: $u := 1 \frac{\text{cm}}{\text{sec}}$
 Distance to Nearest Public Water Intake $\delta X := 2800 \text{ ft}$
 Assumed Depth of Nearest Public Water Intake $d := 1 \text{ m}$
 Turbulence Factors: $Bx := 5.93$
 $By := 0.23$
 Time Required for Transit from Discharge to Nearest Public Water Intake $t = 8.5344 \cdot 10^4 \text{ second}$

$Vol := 2 \pi \cdot t \cdot u \cdot d \cdot (Bx \cdot By)^{0.5}$
 $Vol = 6.26245 \cdot 10^9 \text{ cm}^3$
 $Mp := Vol^{-1}$
 $Mp = 1.59682 \cdot 10^{-10} \text{ cm}^{-3}$

ANNUAL FISH/AQUATIC FOODS CONSUMPTION QUANTITY

Population	Ulap := i		
Infant	<table><tr><td>3</td></tr><tr><td>0 10 · gm</td></tr></table>	3	0 10 · gm
3			
0 10 · gm			
Child	<table><tr><td>3</td></tr><tr><td>8.6 10 · gm</td></tr></table>	3	8.6 10 · gm
3			
8.6 10 · gm			
Teenager	<table><tr><td>3</td></tr><tr><td>19.8 10 · gm</td></tr></table>	3	19.8 10 · gm
3			
19.8 10 · gm			
Adult	<table><tr><td>3</td></tr><tr><td>26 10 · gm</td></tr></table>	3	26 10 · gm
3			
26 10 · gm			

ACTIVITY CONCENTRATIONS

Radionuclide	WATER			FISH TISSUE		
	WConc			FConc		
Co-60	1.25163	10 ⁻¹⁵	cm ⁻³ · Ci	6.25814	10 ⁻¹¹	kg ⁻¹ · Ci
Cs-134	3.07003	10 ⁻¹⁶	cm ⁻³ · Ci	6.14006	10 ⁻¹⁰	kg ⁻¹ · Ci
Cs-137	2.45602	10 ⁻¹⁵	cm ⁻³ · Ci	4.91204	10 ⁻⁹	kg ⁻¹ · Ci

Dose Factors for an Adult

Critical Organ	DFaCo60 := k	DFaCs134 := k	DFaCs137 := k
Bone	0.00 10 ⁰	6.22 10 ⁻⁵	7.97 10 ⁻⁵
Liver	2.14 10 ⁻⁶	1.48 10 ⁻⁴	1.09 10 ⁻⁴
Total Body	4.72 10 ⁻⁶	1.21 10 ⁻⁴	7.14 10 ⁻⁵
Thyroid	0.00 10 ⁰	0.00 10 ⁰	0.00 10 ⁰
Kidney	0.00 10 ⁰	4.79 10 ⁻⁵	3.70 10 ⁻⁵
Lung	0.00 10 ⁰	1.59 10 ⁻⁵	1.23 10 ⁻⁵
GI - LLI	4.02 10 ⁻⁵	2.59 10 ⁻⁶	2.11 10 ⁻⁶

Dose Factors for a Teenager

Critical Organ	DFtCo60 := k	DFtCs134 := k	DFtCs137 := k
Bone	0.00 10 ⁰	8.37 10 ⁻⁵	1.12 10 ⁻⁴
Liver	2.81 10 ⁻⁶	1.97 10 ⁻⁴	1.49 10 ⁻⁴
Total Body	6.33 10 ⁻⁶	9.14 10 ⁻⁵	5.19 10 ⁻⁵
Thyroid	0.00 10 ⁰	0.00 10 ⁰	0.00 10 ⁰
Kidney	0.00 10 ⁰	6.26 10 ⁻⁵	5.07 10 ⁻⁵
Lung	0.00 10 ⁰	2.39 10 ⁻⁵	1.97 10 ⁻⁵
GI - LLI	3.66 10 ⁻⁵	2.45 10 ⁻⁶	2.12 10 ⁻⁶



Dose Factors for a Child

Critical Organ	DFcCo60 := k	DFcCs134 := k	DFcCs137 := k
Bone	$0.00 \cdot 10^0$	$2.34 \cdot 10^{-4}$	$3.27 \cdot 10^{-4}$
Liver	$5.29 \cdot 10^{-6}$	$3.84 \cdot 10^{-4}$	$3.13 \cdot 10^{-4}$
Total Body	$1.56 \cdot 10^{-5}$	$8.10 \cdot 10^{-5}$	$4.62 \cdot 10^{-5}$
Thyroid	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$
Kidney	$0.00 \cdot 10^0$	$1.19 \cdot 10^{-4}$	$1.02 \cdot 10^{-4}$
Lung	$0.00 \cdot 10^0$	$4.27 \cdot 10^{-5}$	$3.67 \cdot 10^{-5}$
GI - LLI	$2.93 \cdot 10^{-5}$	$2.07 \cdot 10^{-6}$	$1.96 \cdot 10^{-6}$

Dose Factors for an Infant

Critical Organ	DFiCo60 := k	DFiCs134 := k	DFiCs137 := k
Bone	$0.00 \cdot 10^0$	$3.77 \cdot 10^{-4}$	$5.22 \cdot 10^{-4}$
Liver	$1.08 \cdot 10^{-5}$	$7.03 \cdot 10^{-4}$	$6.11 \cdot 10^{-4}$
Total Body	$2.55 \cdot 10^{-5}$	$7.10 \cdot 10^{-5}$	$4.33 \cdot 10^{-5}$
Thyroid	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$
Kidney	$0.00 \cdot 10^0$	$1.81 \cdot 10^{-4}$	$1.64 \cdot 10^{-4}$
Lung	$0.00 \cdot 10^0$	$7.42 \cdot 10^{-5}$	$6.64 \cdot 10^{-5}$
GI - LLI	$2.57 \cdot 10^{-5}$	$1.91 \cdot 10^{-6}$	$1.91 \cdot 10^{-6}$

DOSE EQUATIONS FOR THE VARIOUS POPULATIONS

$$ADose_k := 1100 \text{ Ulap} \cdot \left[\begin{matrix} FConc_0 \cdot DFaCo60_k + FConc_1 \cdot DFaCs134_k + FConc_2 \cdot DFaCs137_k \end{matrix} \right] \cdot R_k$$

$$TDose_k := 1100 \text{ Ulap} \cdot \left[\begin{matrix} FConc_0 \cdot DFtCo60_k + FConc_1 \cdot DFtCs134_k + FConc_2 \cdot DFtCs137_k \end{matrix} \right] \cdot R_k$$

$$CDose_k := 1100 \text{ Ulap} \cdot \left[\begin{matrix} FConc_0 \cdot DFcCo60_k + FConc_1 \cdot DFcCs134_k + FConc_2 \cdot DFcCs137_k \end{matrix} \right] \cdot R_k$$

$$Dose_k := 1100 \text{ Ulap} \cdot \left[\begin{matrix} FConc_0 \cdot DFiCo60_k + FConc_1 \cdot DFiCs134_k + FConc_2 \cdot DFiCs137_k \end{matrix} \right] \cdot R_k$$



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100



DOSES (in mRem per year) DUE TO THE INGESTION OF CONTAMINATED FISH

Critical Organ	Adult Dose		Teenager Dose	
	ADose		TDose	
	k		k	
Bone	-8	1	-8	1
	1.22889	10 · mrem/year	1.31016	10 · mrem/year
Liver	-8	1	-8	1
	1.79156	10 · mrem/year	1.8579	10 · mrem/year
Total Body	-8	1	-9	1
	1.21639	10 · mrem/year	6.78341	10 · mrem/year
Thyroid	1		1	
	0	mrem/year	0	mrem/year
Kidney	-9	1	-9	1
	6.03908	10 · mrem/year	6.26126	10 · mrem/year
Lung	-9	1	-9	1
	2.00717	10 · mrem/year	2.42721	10 · mrem/year
GI - LLI	-10	1	-10	1
	4.13855	10 · mrem/year	3.09457	10 · mrem/year

Critical Organ	Child Dose		Infant Dose	
	CDose		IDose	
	k		k	
Bone	-8	1	1	
	1.65542	10 · mrem/year	0	mrem/year
Liver	-8	1	1	
	1.67781	10 · mrem/year	0	mrem/year
Total Body	-9	1	1	
	2.62654	10 · mrem/year	0	mrem/year
Thyroid	1		1	
	0	mrem/year	0	mrem/year
Kidney	-9	1	1	
	5.43094	10 · mrem/year	0	mrem/year
Lung	-9	1	1	
	1.9534	10 · mrem/year	0	mrem/year
GI - LLI	-10	1	1	
	1.20447	10 · mrem/year	0	mrem/year

The doses (in millirem) calculated above correspond to the annual dose one would receive from consuming fish contaminated by the runoff from the doghouse concrete for a period of one full year. This assumption is very conservative in that we assume that all of the radioactive nuclides are going to be leached out of the concrete, none of the radionuclides will be absorbed by the sandy soil, and all of the radionuclides will be washed to Lake Michigan in a single day to form a plume which will not be diluted during the year



INPUT DATA FOR CALCULATION OF DOSES DUE TO GROUND WATER INGESTION

TOTAL ACTIVITY LEVELS

Radionuclide

Inv

Co-60

Cs-134

Cs-137

j		
-6	1	
7.83825 10	· Curie	
-6	1	
1.92259 10	· Curie	
-5	1	
1.53807 10	· Curie	

ANNUAL DRINKING WATER CONSUMPTION

DILUTION VOLUME AND MIXING FRACTION

Population Group

Uap :=

Infant

Child

Teenager

Adult

i		
3		
330 10	· cc	
3		
510 10	· cc	
3		
510 10	· cc	
3		
730 10	· cc	

$$\text{Vol} := \text{Uap}_3 + \sum_i \text{Uap}_i \quad \text{Mp} := \text{Vol}^{-1}$$

$$\text{Vol} = 2.81 \cdot 10^6 \cdot \text{cm}^3$$

$$\text{Mp} = 3.55872 \cdot 10^{-7} \cdot \text{cm}^{-3}$$

ACTIVITY CONCENTRATIONS IN THE GROUND WATER

Radionuclide

Conc

Co-60

Cs-134

Cs-137

j		
-12	-3	1
2.78941 10	· cm	· Curie
-13	-3	1
6.84196 10	· cm	· Curie
-12	-3	1
5.47356 10	· cm	· Curie

Dose Factors for various organs for an adult

Critical Organ	DFaCo60 := k	DFaCs134 := k	DFaCs137 := k
Bone	$0.00 \cdot 10^0$	$6.22 \cdot 10^{-5}$	$7.97 \cdot 10^{-5}$
Liver	$2.14 \cdot 10^{-6}$	$1.48 \cdot 10^{-4}$	$1.09 \cdot 10^{-4}$
Total Body	$4.72 \cdot 10^{-6}$	$1.21 \cdot 10^{-4}$	$7.14 \cdot 10^{-5}$
Thyroid	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$
Kidney	$0.00 \cdot 10^0$	$4.79 \cdot 10^{-5}$	$3.70 \cdot 10^{-5}$
Lung	$0.00 \cdot 10^0$	$1.59 \cdot 10^{-5}$	$1.23 \cdot 10^{-5}$
GI - LLI	$4.02 \cdot 10^{-5}$	$2.59 \cdot 10^{-6}$	$2.11 \cdot 10^{-6}$

Dose Factors for various organs for a teenager

Critical Organ	DftCo60 := k	DftCs134 := k	DftCs137 := k
Bone	$0.00 \cdot 10^0$	$8.37 \cdot 10^{-5}$	$1.12 \cdot 10^{-4}$
Liver	$2.81 \cdot 10^{-6}$	$1.97 \cdot 10^{-4}$	$1.49 \cdot 10^{-4}$
Total Body	$6.33 \cdot 10^{-6}$	$9.14 \cdot 10^{-5}$	$5.19 \cdot 10^{-5}$
Thyroid	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$
Kidney	$0.00 \cdot 10^0$	$6.26 \cdot 10^{-5}$	$5.07 \cdot 10^{-5}$
Lung	$0.00 \cdot 10^0$	$2.39 \cdot 10^{-5}$	$1.97 \cdot 10^{-5}$
GI - LLI	$3.66 \cdot 10^{-5}$	$2.45 \cdot 10^{-6}$	$2.12 \cdot 10^{-6}$

Dose Factors for various organs for a child

Critical Organ	DFcCo60 := k	DFcCs134 := k	DFcCs137 := k
Bone	$0.00 \cdot 10^0$	$2.34 \cdot 10^{-4}$	$3.27 \cdot 10^{-4}$
Liver	$5.29 \cdot 10^{-6}$	$3.84 \cdot 10^{-4}$	$3.13 \cdot 10^{-4}$
Total Body	$1.56 \cdot 10^{-5}$	$8.10 \cdot 10^{-5}$	$4.62 \cdot 10^{-5}$
Thyroid	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$
Kidney	$0.00 \cdot 10^0$	$1.19 \cdot 10^{-4}$	$1.02 \cdot 10^{-4}$
Lung	$0.00 \cdot 10^0$	$4.27 \cdot 10^{-5}$	$3.67 \cdot 10^{-5}$
GI - LLI	$2.93 \cdot 10^{-5}$	$2.07 \cdot 10^{-6}$	$1.96 \cdot 10^{-6}$

Dose Factors for various organs for an infant

Critical Organ	DFiCo60 := k	DFiCs134 := k	DFiCs137 := k
Bone	$0.00 \cdot 10^0$	$3.77 \cdot 10^{-4}$	$5.22 \cdot 10^{-4}$
Liver	$1.08 \cdot 10^{-5}$	$7.03 \cdot 10^{-4}$	$6.11 \cdot 10^{-4}$
Total Body	$2.55 \cdot 10^{-5}$	$7.10 \cdot 10^{-5}$	$4.33 \cdot 10^{-5}$
Thyroid	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$	$0.00 \cdot 10^0$
Kidney	$0.00 \cdot 10^0$	$1.81 \cdot 10^{-4}$	$1.64 \cdot 10^{-4}$
Lung	$0.00 \cdot 10^0$	$7.42 \cdot 10^{-5}$	$6.64 \cdot 10^{-5}$
GI - LLI	$2.57 \cdot 10^{-5}$	$1.91 \cdot 10^{-6}$	$1.91 \cdot 10^{-6}$

Dose equations for the various populations for individual organs

$$ADose_k := 1100 \text{ Uap} \cdot \left[\frac{\text{Conc} \cdot DFaCo60}{0 \cdot k} + \frac{\text{Conc} \cdot DFaCs134}{1 \cdot k} + \frac{\text{Conc} \cdot DFaCs137}{2 \cdot k} \right] \cdot R$$

$$TDose_k := 1100 \text{ Uap} \cdot \left[\frac{\text{Conc} \cdot DFtCo60}{0 \cdot k} + \frac{\text{Conc} \cdot DFtCs134}{1 \cdot k} + \frac{\text{Conc} \cdot DFtCs137}{2 \cdot k} \right] \cdot R$$

$$IDose_k := 1100 \text{ Uap} \cdot \left[\frac{\text{Conc} \cdot DFcCo60}{0 \cdot k} + \frac{\text{Conc} \cdot DFcCs134}{1 \cdot k} + \frac{\text{Conc} \cdot DFcCs137}{2 \cdot k} \right] \cdot R$$

$$IDose_k := 1100 \text{ Uap} \cdot \left[\frac{\text{Conc} \cdot DFiCo60}{0 \cdot k} + \frac{\text{Conc} \cdot DFiCs134}{1 \cdot k} + \frac{\text{Conc} \cdot DFiCs137}{2 \cdot k} \right] \cdot R$$

DOSES (in mrem/year) DUE TO INGESTION OF CONTAMINATED WELL WATER

Adult Dose

Teenager Dose

Critical Organ	ADose	
	k	
Bone	-7	1
	3.84476 10	mrem/yr
Liver	-7	1
	5.6519 10	mrem/yr
Total Body	-7	1
	3.90873 10	mrem/yr
Thyroid	1	
	0 mrem/yr	
Kidney	-7	1
	1.88942 10	mrem/yr
Lung	-8	1
	6.27974 10	mrem/yr
GI - LLI	-7	1
	1.00741 10	mrem/yr

	TDose	
	k	
	-7	1
	3.76042 10	mrem/yr
	-7	1
	5.37542 10	mrem/yr
	-7	1
	2.04356 10	mrem/yr
	1	
	0 mrem/yr	
	-7	1
	1.79711 10	mrem/yr
	-8	1
	6.96658 10	mrem/yr
	-8	1
	6.47241 10	mrem/yr

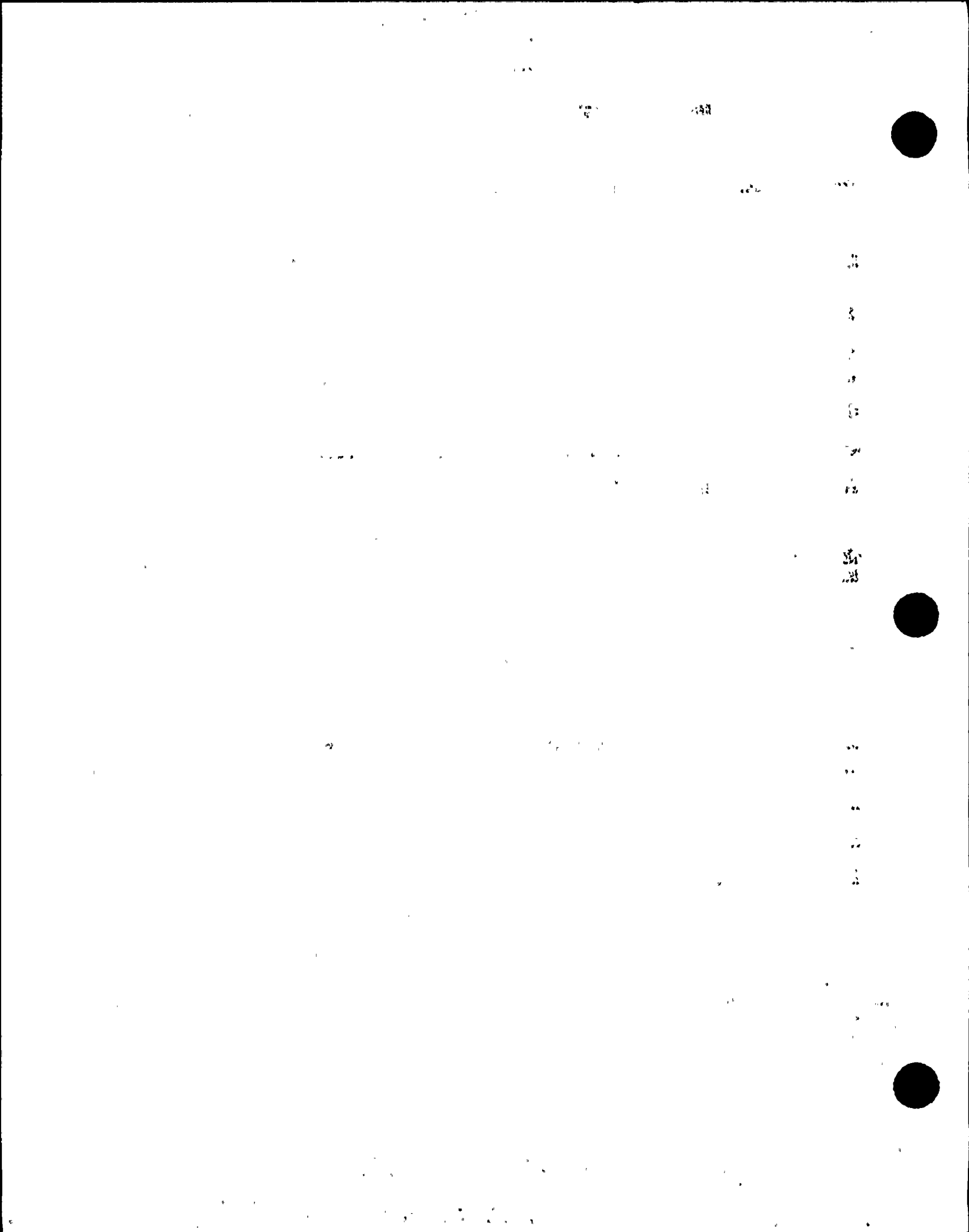
Child Dose

Infant Dose

Critical Organ	CDose	
	k	
Bone	-6	1
	1.09393 10	mrem/yr
Liver	-6	1
	1.11679 10	mrem/yr
Total Body	-7	1
	1.97367 10	mrem/yr
Thyroid	1	
	0 mrem/yr	
Kidney	-7	1
	3.58884 10	mrem/yr
Lung	-7	1
	1.29083 10	mrem/yr
GI - LLI	-8	1
	5.26635 10	mrem/yr

	IDose	
	k	
	-6	1
	1.1308 10	mrem/yr
	-6	1
	1.39953 10	mrem/yr
	-7	1
	1.29487 10	mrem/yr
	1	
	0 mrem/yr	
	-7	1
	3.70806 10	mrem/yr
	-7	1
	1.50359 10	mrem/yr
	-8	1
	3.02921 10	mrem/yr

The doses (in millirem) calculated above correspond to the annual dose one would receive from drinking water contaminated with the runoff from the doghouse concrete for a period of one year. This assumption is very conservative in that we assume that all of the radioactive nuclides are going to be leached out of the concrete, none of the radionuclides will be absorbed by the sandy soil, and all of the radionuclides will be washed to the ground water supply in a single day which will not be diluted.



INPUT DATA FOR CALCULATION OF DOSES DUE TO INGESTION OF AGRICULTURAL PRODUCTS
GROWN ON THE DISPOSAL AREA FOLLOWING LOSS OF INSTITUTIONAL CONTROL

Loss of institutional control occurs 40 years following disposal of concrete

TOTAL ACTIVITY LEVELS

Radionuclide	INITIAL		DECAY CORRECTED	
	Inv	DC	Inv	DC
Co-60	7.83825 10 ⁻⁶ Curies	4.07188 10 ⁻⁸ Curies	1	1
Cs-134	1.92259 10 ⁻⁶ Curies	3.00677 10 ⁻¹² Curies	1	1
Cs-137	1.53807 10 ⁻⁵ Curies	6.10384 10 ⁻⁶ Curies	1	1

The density of soil is 240 kg for a 1 m x 1 m x 0.15 m parcel of soil, thus the areal soil density is 240 kg for a 1 square meter area.

$$\rho_{\text{soil}} = \frac{240 \text{ kg}}{1 \text{ m}^2}$$

Radionuclide	TFsv :=	TFvm :=	TFvd :=	F := 50
Co-60	9.4 10 ⁻³	1.30 10 ⁻²	1.00 10 ⁻³	Ref. 2, p. 37
Cs-134	1.00 10 ⁻²	4.00 10 ⁻³	1.20 10 ⁻²	
Cs-137	1.00 10 ⁻²	4.00 10 ⁻³	1.20 10 ⁻²	

$$S_{\text{Conc}} := \frac{DC}{\rho_{\text{soil}} \cdot \text{Area}}$$

$$V_{\text{Conc}} := S_{\text{Conc}} \cdot TF_{sv}$$

$$M_{\text{Conc}} := V_{\text{Conc}} \cdot TF_{vm} \cdot F$$

$$D_{\text{Conc}} := V_{\text{Conc}} \cdot TF_{vd} \cdot F$$

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RADIONUCLIDE CONCENTRATION (in Ci/kg)

| Radionculide | SOIL | | | VEGETABLE | | |
|--------------|--------------------|-------------------|-------------|--------------------|-------------------|-------------|
| | SConc ₁ | | | VConc ₁ | | |
| Co-60 | 2.87982 | 10 ⁻¹³ | kg · Curies | 2.70703 | 10 ⁻¹⁵ | kg · Curies |
| Cs-134 | 2.12653 | 10 ⁻¹⁷ | kg · Curies | 2.12653 | 10 ⁻¹⁹ | kg · Curies |
| Cs-137 | 4.31691 | 10 ⁻¹¹ | kg · Curies | 4.31691 | 10 ⁻¹³ | kg · Curies |

| Radionculide | MEAT | | | DAIRY PRODUCTS | | |
|--------------|--------------------|-------------------|-------------|--------------------|-------------------|-------------|
| | MConc ₁ | | | DConc ₁ | | |
| Co-60 | 1.75957 | 10 ⁻¹⁵ | kg · Curies | 1.35351 | 10 ⁻¹⁶ | kg · Curies |
| Cs-134 | 4.25306 | 10 ⁻²⁰ | kg · Curies | 1.27592 | 10 ⁻¹⁹ | kg · Curies |
| Cs-137 | 8.63383 | 10 ⁻¹⁴ | kg · Curies | 2.59015 | 10 ⁻¹³ | kg · Curies |

The intake for vegetables (Iv), meat (Im), and milk (Id) in a year is indicated below:

| Critical Population | Iv :=
i | Im :=
i | Id :=
i |
|---------------------|------------|------------|------------|
| Infant | 0 kg | 0 kg | 330 kg |
| Child | 546 kg | 41 kg | 330 kg |
| Teenager | 672 kg | 65 kg | 400 kg |
| Adult | 584 kg | 110 kg | 310 kg |

Dose factors for adult population for various critical organs

| Critical Organ | DFaCo60 :=
k | DFaCs134 :=
k | DFaCs137 :=
k |
|----------------|-----------------------|-----------------------|-----------------------|
| Bone | 0.00 10 ⁰ | 6.22 10 ⁻⁵ | 7.97 10 ⁻⁵ |
| Liver | 2.14 10 ⁻⁶ | 1.48 10 ⁻⁴ | 1.09 10 ⁻⁴ |
| Total Body | 4.72 10 ⁻⁶ | 1.21 10 ⁻⁴ | 7.14 10 ⁻⁵ |
| Thyroid | 0.00 10 ⁰ | 0.00 10 ⁰ | 0.00 10 ⁰ |
| Kidney | 0.00 10 ⁰ | 4.79 10 ⁻⁵ | 3.70 10 ⁻⁵ |
| Lung | 0.00 10 ⁰ | 1.59 10 ⁻⁵ | 1.23 10 ⁻⁵ |
| GI - LLI | 4.02 10 ⁻⁵ | 2.59 10 ⁻⁶ | 2.11 10 ⁻⁶ |

Dose factors for teenager population for various critical organs

| Critical Organ | DFtCo60 :=
k | DFtCs134 :=
k | DFtCs137 :=
k |
|----------------|-----------------------|-----------------------|-----------------------|
| Bone | 0.00 10 ⁰ | 8.37 10 ⁻⁵ | 1.12 10 ⁻⁴ |
| Liver | 2.81 10 ⁻⁶ | 1.97 10 ⁻⁴ | 1.49 10 ⁻⁴ |
| Total Body | 6.33 10 ⁻⁶ | 9.14 10 ⁻⁵ | 5.19 10 ⁻⁵ |
| Thyroid | 0.00 10 ⁰ | 0.00 10 ⁰ | 0.00 10 ⁰ |
| Kidney | 0.00 10 ⁰ | 6.26 10 ⁻⁵ | 5.07 10 ⁻⁵ |
| Lung | 0.00 10 ⁰ | 2.39 10 ⁻⁵ | 1.97 10 ⁻⁵ |
| GI - LLI | 3.66 10 ⁻⁵ | 2.45 10 ⁻⁶ | 2.12 10 ⁻⁶ |

Dose factors for child population for various critical organs

| Critical Organ | DFcCo60 :=
k | DFcCs134 :=
k | DFcCs137 :=
k |
|----------------|-----------------------|-----------------------|-----------------------|
| Bone | 0.00 10 ⁰ | 2.34 10 ⁻⁴ | 3.27 10 ⁻⁴ |
| Liver | 5.29 10 ⁻⁶ | 3.84 10 ⁻⁴ | 3.13 10 ⁻⁴ |
| Total Body | 1.56 10 ⁻⁵ | 8.10 10 ⁻⁵ | 4.62 10 ⁻⁵ |
| Thyroid | 0.00 10 ⁰ | 0.00 10 ⁰ | 0.00 10 ⁰ |
| Kidney | 0.00 10 ⁰ | 1.19 10 ⁻⁴ | 1.02 10 ⁻⁴ |
| Lung | 0.00 10 ⁰ | 4.27 10 ⁻⁵ | 3.67 10 ⁻⁵ |
| GI - LLI | 2.93 10 ⁻⁵ | 2.07 10 ⁻⁶ | 1.96 10 ⁻⁶ |



Dose factors for infant population for various critical organs

| Critical Organ | DFiCo60 :=
k | DFiCs134 :=
k | DFiCs137 :=
k |
|----------------|-----------------|------------------|------------------|
| Bone | 0
0.00 10 | -4
3.77 10 | -4
5.22 10 |
| Liver | -5
1.08 10 | -4
7.03 10 | -4
6.11 10 |
| Total Body | -5
2.55 10 | -5
7.10 10 | -5
4.33 10 |
| Thyroid | 0
0.00 10 | 0
0.00 10 | 0
0.00 10 |
| Kidney | 0
0.00 10 | -4
1.81 10 | -4
1.64 10 |
| Lung | 0
0.00 10 | -5
7.42 10 | -5
6.64 10 |
| GI - LLI | -5
2.57 10 | -6
1.91 10 | -6
1.91 10 |

Dose equations for adults (Axxxxxx), teenagers (Txxxxxx), children (Cxxxxx), and infants (Ixxxx) due to ingestion of vegetables (xVxxxxx), meat (xMxxxxx), dairy products (xDxxxxx), and total agricultural products (xIxxxx) for various critical organs

$$AVDose_k := Iv_k \cdot \left[\frac{VConc_0}{3} \cdot \frac{DFaCo60_k}{k} + \frac{VConc_1}{k} \cdot \frac{DFaCs134_k}{k} + \frac{VConc_2}{k} \cdot \frac{DFaCs137_k}{k} \right] \cdot R$$

$$AMDose_k := Im_k \cdot \left[\frac{MConc_0}{3} \cdot \frac{DFaCo60_k}{k} + \frac{MConc_1}{k} \cdot \frac{DFaCs134_k}{k} + \frac{MConc_2}{k} \cdot \frac{DFaCs137_k}{k} \right] \cdot R$$

$$ADDose_k := Id_k \cdot \left[\frac{DConc_0}{3} \cdot \frac{DFaCo60_k}{k} + \frac{DConc_1}{k} \cdot \frac{DFaCs134_k}{k} + \frac{DConc_2}{k} \cdot \frac{DFaCs137_k}{k} \right] \cdot R$$

$$AIDose_k := AVDose_k + AMDose_k + ADDose_k$$

$$TVDose_k := Iv_k \cdot \left[\frac{VConc_0}{2} \cdot \frac{DFtCo60_k}{k} + \frac{VConc_1}{k} \cdot \frac{DFtCs134_k}{k} + \frac{VConc_2}{k} \cdot \frac{DFtCs137_k}{k} \right] \cdot R$$

$$TMDose_k := Im_k \cdot \left[\frac{MConc_0}{2} \cdot \frac{DFtCo60_k}{k} + \frac{MConc_1}{k} \cdot \frac{DFtCs134_k}{k} + \frac{MConc_2}{k} \cdot \frac{DFtCs137_k}{k} \right] \cdot R$$

$$TDDose_k := Id_k \cdot \left[\frac{DConc_0}{2} \cdot \frac{DFtCo60_k}{k} + \frac{DConc_1}{k} \cdot \frac{DFtCs134_k}{k} + \frac{DConc_2}{k} \cdot \frac{DFtCs137_k}{k} \right] \cdot R$$

$$TIDose_k := TVDose_k + TMDose_k + TDDose_k$$

$$CVDose_k := Iv_k \cdot \left[\frac{VConc_0}{1} \cdot \frac{DFcCo60_k}{k} + \frac{VConc_1}{k} \cdot \frac{DFcCs134_k}{k} + \frac{VConc_2}{k} \cdot \frac{DFcCs137_k}{k} \right] \cdot R$$

$$CMDose_k := Im_k \cdot \left[\frac{MConc_0}{1} \cdot \frac{DFcCo60_k}{k} + \frac{MConc_1}{k} \cdot \frac{DFcCs134_k}{k} + \frac{MConc_2}{k} \cdot \frac{DFcCs137_k}{k} \right] \cdot R$$

$$CDDose_k := Id_k \cdot \left[\frac{DConc_0}{1} \cdot \frac{DFcCo60_k}{k} + \frac{DConc_1}{k} \cdot \frac{DFcCs134_k}{k} + \frac{DConc_2}{k} \cdot \frac{DFcCs137_k}{k} \right] \cdot R$$

$$CIDose_k := CVDose_k + CMDose_k + CDDose_k$$

$$IVDose_k := Iv_0 \left[VConc_0 \cdot DFcCo60_k + VConc_1 \cdot DFcCs134_k + VConc_2 \cdot DFcCs137_k \right] \cdot R$$

$$IMDose_k := Im_0 \left[MConc_0 \cdot DFcCo60_k + MConc_1 \cdot DFcCs134_k + MConc_2 \cdot DFcCs137_k \right] \cdot R$$

$$IDDose_k := Id_0 \left[DConc_0 \cdot DFcCo60_k + DConc_1 \cdot DFcCs134_k + DConc_2 \cdot DFcCs137_k \right] \cdot R$$

$$IIDose_k := IVDose_k + IMDose_k + IDDose_k$$



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DOSES (in mRem per year) DUE TO VEGETABLE INGESTION

| Critical Organ | Adult Dose | Teenager Dose |
|----------------|-------------------------------------------|-------------------------------------------|
| | AVDose
k | TVDose
k |
| Bone | $2.0093 \cdot 10^{-2} \cdot \text{mrem}$ | $3.24908 \cdot 10^{-2} \cdot \text{mrem}$ |
| Liver | $2.74831 \cdot 10^{-2} \cdot \text{mrem}$ | $4.32295 \cdot 10^{-2} \cdot \text{mrem}$ |
| Total Body | $1.8008 \cdot 10^{-2} \cdot \text{mrem}$ | $1.50675 \cdot 10^{-2} \cdot \text{mrem}$ |
| Thyroid | 0 mrem | 0 mrem |
| Kidney | $9.32799 \cdot 10^{-3} \cdot \text{mrem}$ | $1.47079 \cdot 10^{-2} \cdot \text{mrem}$ |
| Lung | $3.10093 \cdot 10^{-3} \cdot \text{mrem}$ | $5.71491 \cdot 10^{-3} \cdot \text{mrem}$ |
| GI - LLI | $5.955 \cdot 10^{-4} \cdot \text{mrem}$ | $6.81585 \cdot 10^{-4} \cdot \text{mrem}$ |

DOSES (in mRem per year) DUE TO MEAT INGESTION

| Critical Organ | Adult Dose | Teenager Dose |
|----------------|-------------------------------------------|-------------------------------------------|
| | AMDose
k | TMDose
k |
| Bone | $7.56928 \cdot 10^{-4} \cdot \text{mrem}$ | $6.28543 \cdot 10^{-4} \cdot \text{mrem}$ |
| Liver | $1.03561 \cdot 10^{-3} \cdot \text{mrem}$ | $8.36508 \cdot 10^{-4} \cdot \text{mrem}$ |
| Total Body | $6.79015 \cdot 10^{-4} \cdot \text{mrem}$ | $2.91986 \cdot 10^{-4} \cdot \text{mrem}$ |
| Thyroid | 0 mrem | 0 mrem |
| Kidney | $3.51397 \cdot 10^{-4} \cdot \text{mrem}$ | $2.84528 \cdot 10^{-4} \cdot \text{mrem}$ |
| Lung | $1.16816 \cdot 10^{-4} \cdot \text{mrem}$ | $1.10556 \cdot 10^{-4} \cdot \text{mrem}$ |
| GI - LLI | $2.78199 \cdot 10^{-5} \cdot \text{mrem}$ | $1.60834 \cdot 10^{-5} \cdot \text{mrem}$ |



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DOSES (in mRem per year) DUE TO MILK CONSUMPTION

| Critical Organ | Adult Dose | Teenager Dose |
|----------------|------------------------------|------------------------------|
| | ADDose
k | TDDose
k |
| Bone | $6.39948 \cdot 10^{-3}$ mrem | $1.16039 \cdot 10^{-2}$ mrem |
| Liver | $8.75221 \cdot 10^{-3}$ mrem | $1.54374 \cdot 10^{-2}$ mrem |
| Total Body | $5.73324 \cdot 10^{-3}$ mrem | $5.37749 \cdot 10^{-3}$ mrem |
| Thyroid | 0 mrem | 0 mrem |
| Kidney | $2.9709 \cdot 10^{-3}$ mrem | $5.25282 \cdot 10^{-3}$ mrem |
| Lung | $9.87624 \cdot 10^{-4}$ mrem | $2.04104 \cdot 10^{-3}$ mrem |
| GI - LLI | $1.71108 \cdot 10^{-4}$ mrem | $2.21626 \cdot 10^{-4}$ mrem |

DOSES (in mRem per year) DUE TO TOTAL FOOD CONSUMPTION

| Critical Organ | Adult Dose | Teenager Dose |
|----------------|------------------------------|------------------------------|
| | AIDose
k | TIDose
k |
| Bone | $2.72494 \cdot 10^{-2}$ mrem | $4.47232 \cdot 10^{-2}$ mrem |
| Liver | $3.7271 \cdot 10^{-2}$ mrem | $5.95035 \cdot 10^{-2}$ mrem |
| Total Body | $2.44202 \cdot 10^{-2}$ mrem | $2.0737 \cdot 10^{-2}$ mrem |
| Thyroid | 0 mrem | 0 mrem |
| Kidney | $1.26503 \cdot 10^{-2}$ mrem | $2.02453 \cdot 10^{-2}$ mrem |
| Lung | $4.20537 \cdot 10^{-3}$ mrem | $7.8665 \cdot 10^{-3}$ mrem |
| GI - LLI | $7.94428 \cdot 10^{-4}$ mrem | $9.19295 \cdot 10^{-4}$ mrem |



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DOSES (in mRem per year) DUE TO VEGETABLE INGESTION

| Critical Organ | Child Dose | Infant Dose |
|----------------|------------------------------------------------------------------------|------------------------------------------------------------------------|
| | CVDose
k | IVDose
k |
| Bone | $\begin{matrix} -2 & 1 \\ 8.24393 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} 1 \\ 0.15143 \text{ mrem} \end{matrix}$ |
| Liver | $\begin{matrix} -2 & 1 \\ 7.89098 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} 1 \\ 0.17725 \text{ mrem} \end{matrix}$ |
| Total Body | $\begin{matrix} -2 & 1 \\ 1.16474 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} -2 & 1 \\ 1.25612 & 10 \cdot \text{mrem} \end{matrix}$ |
| Thyroid | $\begin{matrix} 1 \\ 0 \text{ mrem} \end{matrix}$ | $\begin{matrix} 1 \\ 0 \text{ mrem} \end{matrix}$ |
| Kidney | $\begin{matrix} -2 & 1 \\ 2.5715 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} -2 & 1 \\ 4.75759 & 10 \cdot \text{mrem} \end{matrix}$ |
| Lung | $\begin{matrix} -3 & 1 \\ 9.25236 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} -2 & 1 \\ 1.92624 & 10 \cdot \text{mrem} \end{matrix}$ |
| GI - LLI | $\begin{matrix} -4 & 1 \\ 4.94131 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} -4 & 1 \\ 5.54085 & 10 \cdot \text{mrem} \end{matrix}$ |

DOSES (in mRem per year) DUE TO MEAT INGESTION

| Critical Organ | Child Dose | Infant Dose |
|----------------|------------------------------------------------------------------------|------------------------------------------------------------------------|
| | CMDose
k | IMDose
k |
| Bone | $\begin{matrix} -3 & 1 \\ 3.10559 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} -3 & 1 \\ 2.92946 & 10 \cdot \text{mrem} \end{matrix}$ |
| Liver | $\begin{matrix} -3 & 1 \\ 2.97263 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} -3 & 1 \\ 3.42893 & 10 \cdot \text{mrem} \end{matrix}$ |
| Total Body | $\begin{matrix} -4 & 1 \\ 4.38771 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} -4 & 1 \\ 2.42999 & 10 \cdot \text{mrem} \end{matrix}$ |
| Thyroid | $\begin{matrix} 1 \\ 0 \text{ mrem} \end{matrix}$ | $\begin{matrix} 1 \\ 0 \text{ mrem} \end{matrix}$ |
| Kidney | $\begin{matrix} -4 & 1 \\ 9.68716 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} -4 & 1 \\ 9.20366 & 10 \cdot \text{mrem} \end{matrix}$ |
| Lung | $\begin{matrix} -4 & 1 \\ 3.48548 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} -4 & 1 \\ 3.72636 & 10 \cdot \text{mrem} \end{matrix}$ |
| GI - LLI | $\begin{matrix} -5 & 1 \\ 1.86145 & 10 \cdot \text{mrem} \end{matrix}$ | $\begin{matrix} -5 & 1 \\ 1.07189 & 10 \cdot \text{mrem} \end{matrix}$ |



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DOSES (in mRem per year) DUE TO MILK CONSUMPTION

| Critical Organ | Child Dose | Infant Dose |
|----------------|--------------------------------|--------------------------------|
| | CDDose
k | IDDose
k |
| Bone | $2.62563 \cdot 10^{-2}$ mrem 1 | $5.40823 \cdot 10^{-2}$ mrem 1 |
| Liver | $2.51322 \cdot 10^{-2}$ mrem 1 | $6.33032 \cdot 10^{-2}$ mrem 1 |
| Total Body | $3.70961 \cdot 10^{-3}$ mrem 1 | $4.48614 \cdot 10^{-3}$ mrem 1 |
| Thyroid | 0 mrem 1 | 0 mrem 1 |
| Kidney | $8.19005 \cdot 10^{-3}$ mrem 1 | $1.69914 \cdot 10^{-2}$ mrem 1 |
| Lung | $2.94681 \cdot 10^{-3}$ mrem 1 | $6.87944 \cdot 10^{-3}$ mrem 1 |
| GI - LLI | $1.57377 \cdot 10^{-4}$ mrem 1 | $1.97887 \cdot 10^{-4}$ mrem 1 |

DOSES (in mRem per year) DUE TO INGESTION

| Critical Organ | Child Dose | Infant Dose |
|----------------|--------------------------------|--------------------------------|
| | CIDose
k | IIDose
k |
| Bone | 0.1118 mrem 1 | 0.20844 mrem 1 |
| Liver | 0.10701 mrem 1 | 0.24398 mrem 1 |
| Total Body | $1.57958 \cdot 10^{-2}$ mrem 1 | $1.72903 \cdot 10^{-2}$ mrem 1 |
| Thyroid | 0 mrem 1 | 0 mrem 1 |
| Kidney | $3.48738 \cdot 10^{-2}$ mrem 1 | $6.54876 \cdot 10^{-2}$ mrem 1 |
| Lung | $1.25477 \cdot 10^{-2}$ mrem 1 | $2.65145 \cdot 10^{-2}$ mrem 1 |
| GI - LLI | $6.70123 \cdot 10^{-4}$ mrem 1 | $7.62691 \cdot 10^{-4}$ mrem 1 |



INPUT DATA FOR CALCULATION OF DOSES DUE TO INHALATION OF CONTAMINATED CONCRETE

DUSTS

Basic Data needed in calculation:

| | |
|------------------------------------------|--------------------------------|
| Maximum Surface Area | Area = 589.14 square meters |
| Radius of Equivalent Semi-Circle | R = 19.36642 meters |
| Thickness of Contaminated Layer | t = 0.00216 meters |
| Resuspension Factor | Rf = 0.0001 per meter |
| Fraction of Activity Able to Go Airborne | F = 1.000 |
| Exposure Times | |
| Occupational | T = 1 day continuous exposure |
| Intruder | T = 1 year continuous exposure |
| Areal Activity Equation | Conc = Act / Area |
| Airborne Activity Equation | AConc = Conc * Rf * F |

ACTIVITY LEVELS

| Radionuclide | TOTAL ACTIVITY | AREAL ACTIVITY | AIRBORNE ACTIVITY |
|--------------|------------------------------------|---------------------------------------------------|----------------------------------------------------|
| | Act
j | Conc
j | AConc
j |
| Co-60 | $3.91912 \cdot 10^{-6} \text{ Ci}$ | $6.65227 \cdot 10^{-9} \text{ m}^{-2} \text{ Ci}$ | $6.65227 \cdot 10^{-13} \text{ m}^{-3} \text{ Ci}$ |
| Cs-134 | $9.6129 \cdot 10^{-7} \text{ Ci}$ | $1.63168 \cdot 10^{-9} \text{ m}^{-2} \text{ Ci}$ | $1.63168 \cdot 10^{-13} \text{ m}^{-3} \text{ Ci}$ |
| Cs-137 | $7.69036 \cdot 10^{-6} \text{ Ci}$ | $1.30535 \cdot 10^{-8} \text{ m}^{-2} \text{ Ci}$ | $1.30535 \cdot 10^{-12} \text{ m}^{-3} \text{ Ci}$ |

INHALATION RATES FOR MAXIMALLY EXPOSED INDIVIDUALS

Critical Population

Ra :=
k

Infant

1400 m^3

Child

3700 m^3

Teenager

8000 m^3

Adult

8000 m^3

Dose factors for an adult's critical organs

Critical Organ

DFAaCo60 :=

DFAaCs134 :=

DFAaCs137 :=

Bone
Liver
Total Body
Thyroid
Kidney
Lung
GI - LLI

| k |
|---------|
| 0 |
| 0.00 10 |
| -6 |
| 1.44 10 |
| -6 |
| 1.85 10 |
| 0 |
| 0.00 10 |
| 0 |
| 0.00 10 |
| -4 |
| 7.46 10 |
| -5 |
| 3.56 10 |

| k |
|---------|
| -5 |
| 4.66 10 |
| -4 |
| 1.06 10 |
| -5 |
| 9.10 10 |
| 0 |
| 0.00 10 |
| -5 |
| 3.59 10 |
| -5 |
| 1.22 10 |
| -6 |
| 1.30 10 |

| k |
|----------|
| -5 |
| 5.98 10 |
| -4 |
| 0.776 10 |
| -5 |
| 5.35 10 |
| 0 |
| 0.00 10 |
| -5 |
| 2.78 10 |
| -5 |
| 0.940 10 |
| -6 |
| 1.05 10 |

Dose factors for a teenager's critical organs

Critical Organ

DFAtCo60 :=

DFAtCs134 :=

DFAtCs137 :=

Bone
Liver
Total Body
Thyroid
Kidney
Lung
GI - LLI

| k |
|---------|
| 0 |
| 0.00 10 |
| -6 |
| 1.89 10 |
| -6 |
| 2.48 10 |
| 0 |
| 0.00 10 |
| 0 |
| 0.00 10 |
| -3 |
| 1.09 10 |
| -5 |
| 3.24 10 |

| k |
|---------|
| -5 |
| 6.28 10 |
| -4 |
| 1.41 10 |
| -5 |
| 6.86 10 |
| 0 |
| 0.00 10 |
| -5 |
| 4.69 10 |
| -5 |
| 1.83 10 |
| -6 |
| 1.22 10 |

| k |
|----------|
| -4 |
| 0.838 10 |
| -4 |
| 1.06 10 |
| -5 |
| 3.89 10 |
| 0 |
| 0.00 10 |
| -5 |
| 3.80 10 |
| -5 |
| 1.51 10 |
| -6 |
| 1.06 10 |

Dose factors for a child's critical organs

Critical Organ

DFAcCo60 :=

DFAcCs134 :=

DFAcCs137 :=

Bone
Liver
Total Body
Thyroid
Kidney
Lung
GI - LLI

| k |
|----------|
| 0 |
| 0.00 10 |
| -6 |
| 3.55 10 |
| -5 |
| 0.612 10 |
| 0 |
| 0.00 10 |
| 0 |
| 0.00 10 |
| -3 |
| 1.91 10 |
| -5 |
| 2.60 10 |

| k |
|----------|
| -4 |
| 1.76 10 |
| -4 |
| 2.74 10 |
| -5 |
| 6.07 10 |
| 0 |
| 0.00 10 |
| -4 |
| 0.893 10 |
| -5 |
| 3.27 10 |
| -6 |
| 1.04 10 |

| k |
|----------|
| -4 |
| 2.45 10 |
| -4 |
| 2.23 10 |
| -5 |
| 3.47 10 |
| 0 |
| 0.00 10 |
| -4 |
| 0.763 10 |
| -5 |
| 2.81 10 |
| -6 |
| 0.978 10 |



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Dose factors for an infant's critical organs

| Critical Organ | DFAiCo60 :=
k | DFAiCs134 :=
k | DFAiCs137 :=
k |
|----------------|-----------------------|-----------------------|-----------------------|
| Bone | $0.00 \cdot 10^0$ | $2.83 \cdot 10^{-4}$ | $3.92 \cdot 10^{-4}$ |
| Liver | $0.573 \cdot 10^{-5}$ | $5.02 \cdot 10^{-4}$ | $4.37 \cdot 10^{-4}$ |
| Total Body | $0.841 \cdot 10^{-5}$ | $5.32 \cdot 10^{-5}$ | $3.25 \cdot 10^{-5}$ |
| Thyroid | $0.00 \cdot 10^0$ | $0.00 \cdot 10^0$ | $0.00 \cdot 10^0$ |
| Kidney | $0.00 \cdot 10^0$ | $1.36 \cdot 10^{-4}$ | $1.23 \cdot 10^{-4}$ |
| Lung | $3.22 \cdot 10^{-3}$ | $5.69 \cdot 10^{-5}$ | $5.09 \cdot 10^{-5}$ |
| GI - LLI | $2.28 \cdot 10^{-5}$ | $0.953 \cdot 10^{-6}$ | $0.953 \cdot 10^{-6}$ |

Dose equations for dose calculations for adult, teenager, child, and infant inhalation doses.

$$ADose_k := Ra_3 \left[AConc_0 \cdot DFAaCo60_k + AConc_1 \cdot DFAaCs134_k + AConc_2 \cdot DFAaCs137_k \right] \cdot mrem$$

$$CDose_k := Ra_2 \left[AConc_0 \cdot DFAtCo60_k + AConc_1 \cdot DFAtCs134_k + AConc_2 \cdot DFAtCs137_k \right] \cdot mrem$$

$$CDose_k := Ra_1 \left[AConc_0 \cdot DFACo60_k + AConc_1 \cdot DFACs134_k + AConc_2 \cdot DFACs137_k \right] \cdot mrem$$

$$IDose_k := Ra_0 \left[AConc_0 \cdot DFAiCo60_k + AConc_1 \cdot DFAiCs134_k + AConc_2 \cdot DFAiCs137_k \right] \cdot mrem$$



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OCCUPATIONAL DOSES DUE TO INHALATION OF CONTAMINATED CONCRETE DUSTS

| Critical Organ | Adult Dose | | | Teenager Dose | | |
|----------------|-------------|-------------------|-------------|---------------|-------------------|-------------|
| | ADose
k | | | TDose
k | | |
| Bone | 1.87576 | 10 ⁻¹⁵ | 1 mrem/year | 2.61964 | 10 ⁻¹⁵ | 1 mrem/year |
| Liver | 2.61775 | 10 ⁻¹⁵ | 1 mrem/year | 3.56111 | 10 ⁻¹⁵ | 1 mrem/year |
| Total Body | 1.88127 | 10 ⁻¹⁵ | 1 mrem/year | 1.39311 | 10 ⁻¹⁵ | 1 mrem/year |
| Thyroid | 0 mrem/year | | | 0 mrem/year | | |
| Kidney | 9.22876 | 10 ⁻¹⁶ | 1 mrem/year | 1.25372 | 10 ⁻¹⁵ | 1 mrem/year |
| Lung | 1.11788 | 10 ⁻¹⁴ | 1 mrem/year | 1.63743 | 10 ⁻¹⁴ | 1 mrem/year |
| GI - LLI | 5.53219 | 10 ⁻¹⁶ | 1 mrem/year | 5.06607 | 10 ⁻¹⁶ | 1 mrem/year |

| Critical Organ | Child Dose | | | Infant Dose | | |
|----------------|-------------|-------------------|-------------|-------------|-------------------|-------------|
| | CDose
k | | | IDose
k | | |
| Bone | 3.52965 | 10 ⁻¹⁵ | 1 mrem/year | 2.13775 | 10 ⁻¹⁵ | 1 mrem/year |
| Liver | 3.42468 | 10 ⁻¹⁵ | 1 mrem/year | 2.51437 | 10 ⁻¹⁵ | 1 mrem/year |
| Total Body | 6.00257 | 10 ⁻¹⁶ | 1 mrem/year | 2.17268 | 10 ⁻¹⁶ | 1 mrem/year |
| Thyroid | 0 mrem/year | | | 0 mrem/year | | |
| Kidney | 1.15623 | 10 ⁻¹⁵ | 1 mrem/year | 7.00285 | 10 ⁻¹⁶ | 1 mrem/year |
| Lung | 1.32931 | 10 ⁻¹⁴ | 1 mrem/year | 8.49832 | 10 ⁻¹⁵ | 1 mrem/year |
| GI - LLI | 1.89808 | 10 ⁻¹⁶ | 1 mrem/year | 6.34826 | 10 ⁻¹⁷ | 1 mrem/year |

The doses calculated above are in millirem and are extremely conservative in that we assume that the resuspended material, once resuspended, remains airborne for a full day and will not settle out. Further, we assume that a person will be in the immediate area continuously for a full day. whereas any worker would only be present for a third of a day.



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INTRUDER DOSES DUE TO INHALATION OF CONTAMINATED CONCRETE DUSTS

| Critical Organ | Adult Dose | Teenager Dose |
|----------------|--------------------------------------|--------------------------------------|
| | ADose
k | TDose
k |
| Bone | $6.8531 \cdot 10^{-13}$ mrem/year 1 | $9.57085 \cdot 10^{-13}$ mrem/year 1 |
| Liver | $9.56394 \cdot 10^{-13}$ mrem/year 1 | $1.30105 \cdot 10^{-12}$ mrem/year 1 |
| Total Body | $6.87323 \cdot 10^{-13}$ mrem/year 1 | $5.08971 \cdot 10^{-13}$ mrem/year 1 |
| Thyroid | 0 mrem/year 1 | 0 mrem/year 1 |
| Kidney | $3.37173 \cdot 10^{-13}$ mrem/year 1 | $4.58048 \cdot 10^{-13}$ mrem/year 1 |
| Lung | $4.08416 \cdot 10^{-12}$ mrem/year 1 | $5.98236 \cdot 10^{-12}$ mrem/year 1 |
| GI - LLI | $2.02119 \cdot 10^{-13}$ mrem/year 1 | $1.85089 \cdot 10^{-13}$ mrem/year 1 |

| Critical Organ | Child Dose | Infant Dose |
|----------------|--------------------------------------|--------------------------------------|
| | CDose
k | IDose
k |
| Bone | $1.28956 \cdot 10^{-12}$ mrem/year 1 | $7.81025 \cdot 10^{-13}$ mrem/year 1 |
| Liver | $1.25121 \cdot 10^{-12}$ mrem/year 1 | $9.18626 \cdot 10^{-13}$ mrem/year 1 |
| Total Body | $2.19304 \cdot 10^{-13}$ mrem/year 1 | $7.93788 \cdot 10^{-14}$ mrem/year 1 |
| Thyroid | 0 mrem/year 1 | 0 mrem/year 1 |
| Kidney | $4.22427 \cdot 10^{-13}$ mrem/year 1 | $2.55849 \cdot 10^{-13}$ mrem/year 1 |
| Lung | $4.85662 \cdot 10^{-12}$ mrem/year 1 | $3.10486 \cdot 10^{-12}$ mrem/year 1 |
| GI - LLI | $6.93463 \cdot 10^{-14}$ mrem/year 1 | $2.31934 \cdot 10^{-14}$ mrem/year 1 |

The doses calculated above are in millirem and are extremely conservative in that we assume that the resuspended material, once resuspended, remains airborne for a full day and will not settle out. Further, we assume that a person will be in the immediate area continuously for a full year. Whereas any intruder would be present for only a fraction of the year. We also assumed that the contaminated material is resuspended each and every day of the year and is not depleted by decay, dilution, or by any other mechanism.

APPENDIX C

Donald C. Cook Nuclear Plant
Unit 2 Steam Generator Repair Project
Concrete Disposal References



200

100

50

25

10

5

2

1

0

0

0

0



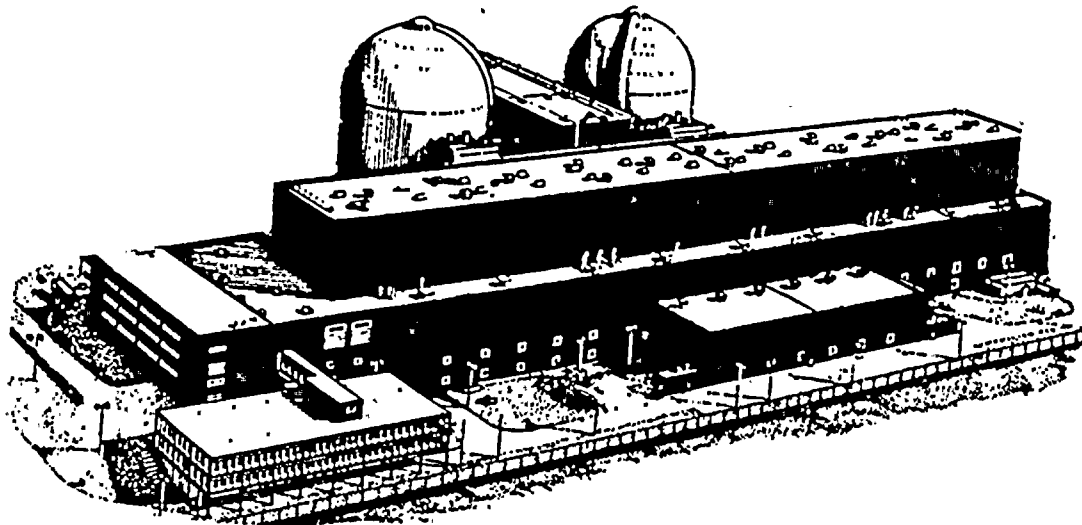
- I. US NRC, Regulatory Guide 1.109, Rev. 1, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purposes of Evaluating Compliance with 10 CFR Part 50, Appendix I," October, 1977.
- II. US NRC, Regulatory Guide 1.113, Rev. 1, "Estimating Aquatic Dispersion of Effluents from Accidental and Routine Reactor Releases for the Purpose of Implementing Appendix I," April, 1977.
- III. Till, John E., and Meyer, H. Robert, eds., Radiological Assessment, US NRC Technical Report NUREG/CR 3332, September, 1983.
- IV. Bureau of Radiological Health, Radiological Health Handbook, Washington, D. C., U. S. Government Printing Office, 1970.
- V. Cember, Herman, Introduction to Health Physics, 2nd Edition, Pergamon Press, New York, 1983.
- VI. Johns, H. E., and Cunningham, J. R., The Physics of Radiology, 4th Edition, Charles C. Thomas Publisher, Springfield, 1983.
- VII. Olander, D. R., Fundamental Aspects of Nuclear Reactor Fuel Elements, TID-26711-P1, Energy Research and Development Administration, 1976.
- VIII. Kocher, D. C., Radioactive Decay Data Tables, DOE/TIC-11026, US Department of Energy Technical Information Center, 1981.
- IX. US NRC, Donald C. Cook Nuclear Plant Final Environmental Safety Report.
- X. Donald C. Cook Nuclear Plant Unit 2, Steam Generator Repair Report, up to and including Revision 6.
- XI. NRC Staff Implementation of NRC Policy on Radioactive Waste Below Regulatory Concern, Federal Register, Vol. 51, No. 168, Friday, August 29, 1986, page 30840.
- XII. 10 CFR 50, Appendix I. Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion "As Low As Reasonably Achievable" for Radioactive Material In Light-Water-Cooled Nuclear Power Reactor Effluents.
- XIII. Final Environmental Statement Related to Operation of Donald C. Cook Nuclear Plant Units 1 and 2 (FES), issued by the United States Atomic Energy Commission In August 1973.



**REACTOR CONTAINMENT BUILDING
INTEGRATED LEAKAGE RATE**

February, 1989

for



D. C. COOK NUCLEAR PLANT

UNIT 2

INDIANA MICHIGAN POWER COMPANY

BRIDGMAN, MICHIGAN

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Temperature vs Time
Pressure vs Time
Dew Point vs Time
Containment Mass vs Time
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G VERIFICATION TEST PLOTS

Containment Mass vs Time

Mass Point Leakage Rate vs Time

Total Time Leakage Rate vs Time

H SCHEMATIC FOR LEAKAGE RATE MEASURING SYSTEM

I 1986 REFUELING OUTAGE B&C TEST SUMMARY

J 1988/9 REFUELING OUTAGE B&C TEST SUMMARY

1.0 INTRODUCTION

The 10th year periodic Integrated Leakage Rate Test (ILRT) was conducted on the D.C. Cook (Cook) Unit 2 containment between February 11 and February 13, 1989. This test was performed to demonstrate that the containment leakage under prescribed post accident conditions does not exceed the allowable values specified in the Cook Unit 2 FSAR (Reference 1) and Technical Specifications (Reference 2).

The test was conducted in accordance with the requirements of the ILRT procedure (Reference 3), Appendix J to 10CFR50 (Reference 4), ANSI/ANS-56.8-1981 (Reference 5), ANSI N45.4-1972 (Reference 6), and BN-TOP-1 (Reference 7). Test results, which satisfied all acceptance criteria are summarized below.

| | Mass Point | Total Time | Allowable | Operational |
|--------------------------|------------|------------|-----------|-------------|
| Type A LSF LR %wt/day | 0.0165* | 0.0293* | 0.1875 | 0.2500 |
| Type A 95%UCL LR %wt/day | 0.0186* | 0.0454* | 0.1875 | 0.2500 |

*Includes penalties for nonstandard alignments of .0034%/day.

A summary of the test events and test chronology are presented in Section 2.0, Test Synopsis. Plant information, technical data, and test results, are presented in Section 3.0, Test Data Summary. Test results are discussed in Section 4.0, Analysis and Interpretation. Instrumentation and the data acquisition system are discussed in Section 5.0, Instrumentation and references are listed in Section 6.0.



2.0 TEST SYNOPSIS

The containment was isolated by aligning systems in the specified post accident modes, except as noted in Table 2. Prior to pressurization, the containment sump water levels were measured. A pre-test walkdown of the containment structure yielded no unacceptable structure deterioration. ILRT pressure (26.8 psia) was reached at 14:35 on February 11, 1989. No penetrations had significant leaks detected. The pressurization line was isolated from the containment and vented.

The temperature stabilization criteria was satisfied during the five hour period from 14:45 to 19:45 on February 11, 1989. (During the temperature stabilization phase of testing, test personnel were notified by the NRC of discrepancies between plant valve alignments and what was specified in the test procedure for the containment penetration pressurization system. This system was properly aligned before the Type A test started. (Reference response to inspection report 50/316 89007 (DRS) dated 4/12/89 for additional details.)

The Type A test period began at 20:00 on February 11th. Initial test pressure was 26.7 psia. Containment pressure, dewpoint, and temperature were recorded at 15 minute intervals using electronic sensors and data logging devices. Reactor vessel level was maintained constant during testing. The containment sumps were measured before and after the ILRT. The Type A test was completed at 20:00 on February 12, after twenty four hours of data had satisfied all leakage rate acceptance criteria.

The verification test was initiated by continuously venting approximately 4.0 SCFM of air from the containment through a flowmeter. The verification leakage rate calculated using the 4 hours of data from 20:15 to 00:15 on February 12, had verified the performance of the instrument system.

3.0 TEST DATA SUMMARY

3.1 Plant Information

1. Owner: American Electric Power
2. Plant: D. C. Cook Unit 2
3. Location: Bridgman, Michigan
4. Containment Type: Reinforced Concrete with steel liner
5. NSSS Supplier, Type: Westinghouse
6. Date Test Completed: February 13, 1989
7. Docket Number: 50-316

3.2 Technical Data

1. Containment Net Free Air Volume ft.
During Test: 1,177,818 cu. ft.
2. Design Pressure: 12 psig
3. Peak Accident Pressure, Pa: 12 psig
4. Maximum Allowable Leakage Rate (La): .25% wt/day
5. Maximum Allowable Measured Leak Rate: .75 La or .1875% wt/day

3.3 Type A Test Results

1. Test Method Absolute
2. Data Analysis Technique Mass Point, 24 hours
3. Test Pressure (at start of test) 26.71 psia
4. Test Pressure (at end of test) 26.57 psia
5. Type A Leakage Rate Test Results
(Total Time leakage rates included
for information only)

| | Mass Point | Total Time |
|-----------------------|------------|------------|
| Type A LSF %wt/day | 0.0165* | 0.0293* |
| Type A 95%UCL %wt/day | 0.0186* | 0.0454* |

*Includes penalties for nonstandard alignments of .0034%wt/day as shown in Table 2.

3.4 Verification Test Results

1. Imposed Verification Leakage Rate 0.2568%day (~4.0 SCFM)
2. Verification Test Results using
Mass Point Analysis 0.2702%wt/day
3. Verification Test Limits
Upper** 0.3324%wt/day
Lower*** 0.2074 %wt/day

**Upper Limit = $Lo + Lam + 0.25 La$
***Lower Limit = $Lo + Lam - 0.25 La$

3.5 As Found Leakage Rate of Containment

1. Repairs and adjustments made to containment during 1988/89 refueling outage prior to the integrated leak rate test 0.0157%wt/day*
2. Type A 95% UCL Mass Point Leakage Rate 0.0186%wt/day**
3. As Found Leakage Rate of containment 0.0343%wt/day

*Table 3 shows the tabulation of repairs and adjustments made to containment during the 1988/89 refueling outage. Improvements to containment were calculated using the minimum pathway leakage.

**Includes penalties for non-standard valve alignments.

3.6. Report Printouts

The report printouts, sensor data, and plots for the Type A and verification test calculations are provided in Appendices B-G.

3.7 Summary of Type B and C Testing

A summary of the Type A, B and C testing performed on the reactor containment since the last ILRT is included in Appendix I and Appendix J to this report.

4.0 ANALYSIS AND INTERPRETATION

The measured leakage rate from containment, with the additional measured leakage rates for systems not aligned for the Type A test, has been demonstrated to be within the limits of the D.C. Cook Plant FSAR and Technical Specifications. NO appreciable sump level changes or Reactor Coolant System inventory changes occurred during testing which would affect test results.

The repairs and adjustments made to containment penetrations and containment isolation valves during the 1988/89 refueling outage were added into the measured leakage rates, using the Minimum Pathway methodology. These results demonstrated that, prior to the start of the most recent refueling outage, the total containment leakage rate was within the limits stated in the D.C. Cook FSAR and Technical Specifications.

A walkdown of all accessible surfaces inside and outside of containment prior to the start of the ILRT did NOT reveal any deterioration which would affect the structural integrity, or leakage characteristics of the containment building.

5.0 INSTRUMENTATION

ILRT test data were gathered through sensors and a data acquisition system. The data acquisition system received these inputs and transmitted them into a mini-computer which reduced the raw data to containment leakage. (See Appendix A for a software program description.)

5.1 Instrumentation

The instrumentation was chosen for its stability and dependability. The instrumentation used during the ILRT satisfied all Instrument Selection Guide requirements. All instrumentation performed satisfactorily during the test. The instruments are listed in Figure 5.0.

5.2 Sensor Location and Volume Fraction (See Table 1)

A mathematical model of the containment was developed using elevation and plan view construction drawings to define containment subvolumes boundaries. Subsequent to subvolume boundary definition, volume fractions were assigned to each subvolume in the containment. Sensors were then placed as near to centroid of each subvolume as possible to detect changes in containment atmospheric conditions (see Reference 9) Table 1 assignment. Since the ILRT was performed with all ventilation off, sensors were also placed with consideration given to air stratification and thermal updrafts caused by natural convection.

5.3 Instrument Selection Guide (ISG) Calculation (Refer to Appendix G of Reference 5)

5.3.1 Test Parameters

| | <u>Assumed</u> | <u>Actual</u> | |
|----------|----------------|---------------|------------------------|
| 1. La = | 0.25%/day | 0.25%/day | Allowable Leakage Rate |
| 2. P = | 26.7 | 26.5 | Pressure (psia) |
| 3. T = | 530 | 518.8 | Drybulb Temp. (deg.R) |
| 4. Tdp = | 490 | 485.6 | Dewpoint Temp. (deg.R) |
| 5. t = | 24 Hr. | same | Test Duration |



5.3.2

Instrument Parameters

Absolute Pressure

| | |
|-------------------|-----------|
| Number of Sensors | 6 |
| Sensitivity (E) | .0033 PSI |
| Repeatability (E) | .0002 PSI |

$$eP = \frac{[(.0033)^2 + (.0002)^2]^{\frac{1}{2}}}{6^{\frac{1}{2}}} = .0014$$

Water Vapor Pressure

| | |
|-------------------|---------|
| Number of Sensors | 7 |
| Sensitivity (E) | 0.360°F |
| Repeatability (E) | 0.100°F |

Note: This is a loop through the DAS.

At 30°F, the water vapor pressure changes approximately .015 PSI/°F

$$ePv = \frac{[(0.360 \times .015)^2 + (0.010 \times 0.015)^2]^{\frac{1}{2}}}{(7)^{\frac{1}{2}}} = .0021$$

Temperature

| | |
|-------------------|--------|
| Number of Sensors | 46 |
| Sensitivity | .230°F |
| Repeatability | .075°F |

Note: This is a loop through the DAS

$$eT = \frac{[(0.230)^2 + (0.075)^2]^{\frac{1}{2}}}{46^{\frac{1}{2}}} = .0357^{\circ}\text{F}$$

5.3.3

ISG Equation

ISG (Assumed Parameters)

$$\text{ISG} = \frac{2400}{24} [2(.0014/26.7)^2 + 2(.0021/26.7)^2 + 2(.0357/530)^2]^{\frac{1}{2}} = 0.0164\% \text{wt/day}$$

ISG (Actual test parameters)

$$\text{ISG} = \frac{2400}{24} [2(.0014/26.5)^2 + 2(.0021/26.5)^2 + 2(.0357/518.8)^2]^{\frac{1}{2}} = 0.0166\% \text{wt/day}$$

FIGURE 5.0

LEAKAGE RATE MEASUREMENT SYSTEM

| Parameter Measure | Number of Sensors | Description of Instrument | Specifications |
|-------------------------------|-------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Containment Absolute Pressure | 6 | MENSOR Quartz Manometer | Range: 0-30 PSIA
Accuracy: $\pm .010\%$ Reading +
$.002\%$ Full Scale +
5 Microns
Repeatability: 0002 PSIA |
| Drybulb Temperature | 46 | Platinum RTD and Data Logger* | Calibrated Range: 32°F - 250°F
Accuracy: $\pm 0.23^\circ\text{F}$
Sensitivity: $\pm 0.02^\circ\text{F}$
Repeatability: $\pm 0.054^\circ\text{F}$ |
| Dewpoint Temperature | 7 | GENERAL EASTERN Chilled Mirror Dewpoint Hygrometer Model M2* | Calibrated Range: 0 - 100°F
Accuracy: $\pm 0.36^\circ\text{F}$
Repeatability: $\pm 0.10^\circ\text{F}$ |
| Verification Test Flow Rate | 1 | VOLUMETRICS Thermal Mass Flow Meter | Range: 0 - 14 SCFM
Accuracy: $\pm -0.1\%$
Repeatability: $\pm -0.25\%$ |
| Data Logger (DAS) | N/A | Fluke 2280 B, equipped with milliamp, RTD, and BCD scanner options. | Included in instruments above. |

* The DAS is part of the measurement system and has been included in the accuracy and repeatability.

6.0 REFERENCES

1. D.C. Cook Unit 2, FSAR 5.7
2. D.C. Cook Unit 2, Technical Specifications, Section 3/4.6
3. D.C. Cook Unit 2, Operational Test Procedure, Containment Integrated Leakage Rate Test (**2 THP 4030 STP.202).
4. Code of Federal Regulations, Title 10, Part 50, Appendix J, Primary Reactor Containment Leakage Rate Testing for Water Cooled Power Reactors.
5. ANSI/ANS 56.8-1987, Containment System Leakage Testing Requirements.
6. ANSI N45.4-1972, Leakage Rate Testing of Containment Structures for Nuclear Reactors.
7. Topical Report, BN-TOP-1, Testing Criteria for Integrated Leakage Rate Testing of Primary Containment Structure for Nuclear Power Plants, Bechtel Corporation, Revision 1, dated November 1, 1972.
8. D.C. Cook Unit 2, Test Procedure, Containment Local Leak Rate Testing (**2 THP 4030 STP.203).
9. ILRT Instrument Volume Weighting Factors 12-PI-04, 12-PI-05

7.0 ILRT DATA

The ILRT data and calculated leakage rates are presented as reports and plots in Appendices B through G. These reports and plots illustrate that the ILRT that was performed uninterrupted and without perturbation. The Type A containment mass and mass point leakage rate plot shows that the leakage rate remained essentially constant for the entire test period data.

TABLE 1
SENSOR LOCATIONS AND WEIGHTING FRACTIONS

| DRYBULB TEMPERATURE | | | |
|---------------------|------------|---------------|--------------------|
| COMPUTER
NO. | ETR
NO. | SENSOR
NO. | VOLUME
FRACTION |
| RTD-1 | 101 | TT-107 | 0.0376 |
| RTD-2 | 102 | TT-027 | 0.0694 |
| RTD-3 | 103 | TT-007 | 0.0497 |
| RFD-4 | 104 | TT-063 | 0.0497 |
| RTD-5 | 105 | TT-025 | 0.0574 |
| RTD-6 | 106 | TT-005 | 0.0574 |
| RTD-7 | 107 | TT-002 | 0.0574 |
| RTD-8 | 108 | TT-003 | 0.0574 |
| RTD-9 | 109 | TT-011 | 0.0177 |
| RTD-10 | 110 | TT-013 | 0.0177 |
| RTD-11 | 111 | TT-015 | 0.0177 |
| RTD-12 | 112 | TT-012 | 0.0177 |
| RTD-13 | 113 | TT-084 | 0.0307 |
| RTD-14 | 114 | TT-083 | 0.0442 |
| RTD-15 | 115 | TT-009 | 0.0101 |
| RTD-16 | 116 | TT-004 | 0.0101 |
| RTD-17 | 117 | TT-001 | 0.0098 |
| RTD-18 | 118 | TT-008 | 0.0098 |
| RTD-19 | 119 | TT-070 | 0.0302 |
| RTD-20 | 120 | TT-061 | 0.0377 |
| RTD-21 | 121 | TT-062 | 0.0283 |
| RTD-22 | 122 | TT-010 | 0.0110 |
| RTD-23 | 123 | TT-023 | 0.0110 |
| RTD-24 | 124 | TT-087 | 0.0110 |
| RTD-25 | 125 | TT-069 | 0.0110 |
| RTD-26 | 126 | TT-065 | 0.0027 |
| RTD-27 | 127 | TT-014 | 0.0076 |
| RTD-28 | 128 | TT-016 | 0.0062 |
| RTD-29 | 129 | TT-090 | 0.0156 |
| RTD-30 | 130 | TT-060 | 0.0023 |
| RTD-31 | 131 | TT-122 | 0.0071 |
| RTD-32 | 132 | TT-028 | 0.0156 |
| RTD-33 | 133 | TT-067 | 0.0100 |
| RTD-34 | 134 | TT-066 | 0.0276 |
| RTD-35 | 135 | TT-088 | 0.0276 |
| RTD-36 | 136 | TT-024 | 0.0276 |
| RTD-37 | 137 | TT-081 | 0.0276 |
| RTD-38 | 138 | TT-127 | 0.0133 |
| RTD-39 | 139 | TT-018 | 0.0025 |
| RTD-40 | 140 | TT-086 | 0.0065 |
| RTD-41 | 141 | TT-082 | 0.0039 |
| RTD-42 | 142 | TT-030 | 0.0045 |
| RTD-43 | 143 | TT-064 | 0.0066 |
| RTD-44 | 144 | TT-089 | 0.0058 |
| RTD-45 | 145 | TT-059 | 0.0064 |
| RTD-46 | 146 | TT-056 | 0.0113 |

For RTD Locations, see Sketch attached to Table 1

TABLE 1 (Continued)

DEWPOINT

| COMPUTER
NO. | LOCATION | SENSOR
NO. | VOLUME
FRACTION |
|-----------------|--------------------------|---------------|--------------------|
| RHD-1 | 652 ELEV. BELOW ETR-109 | CNP-760 | 0.1619 |
| RHD-2 | 690 ELEV. ABOVE ETR-109 | CNP-758 | 0.0993 |
| RHD-3 | NEAR ETR-102 | CNP-759 | 0.3367 |
| RHD-4 | UPPER ICE CONDENSER | CNP-756 | 0.0399 |
| RHD-5 | PIPE TUNNEL NEAR ETR-142 | CNP-753 | 0.0449 |
| RHD-6 | BASEMENT NEAR ETR-139 | CNP-761 | 0.2211 |
| RHD-7 | LOWER ICE CONDENSER | CNP-757 | 0.0962 |

PRESSURE

| | LOCATION | SENSOR
NO. | VOLUME
FRACTION |
|---------|-------------------|---------------|--------------------|
| PRESS-1 | UPPER CONTAINMENT | CNP-491 | .2990 |
| PRESS-2 | UPPER CONTAINMENT | CNP-490 | .2990 |
| PRESS-3 | LOWER CONTAINMENT | CNP-492 | .1330 |
| PRESS-4 | LOWER CONTAINMENT | CNP-495 | .1330 |
| PRESS-5 | ICE CONDENSER | CNP-489 | .0680 |
| PRESS-6 | ICE CONDENSER | CNP-493 | .0680 |



11-11-61

11-11-61

11-11-61

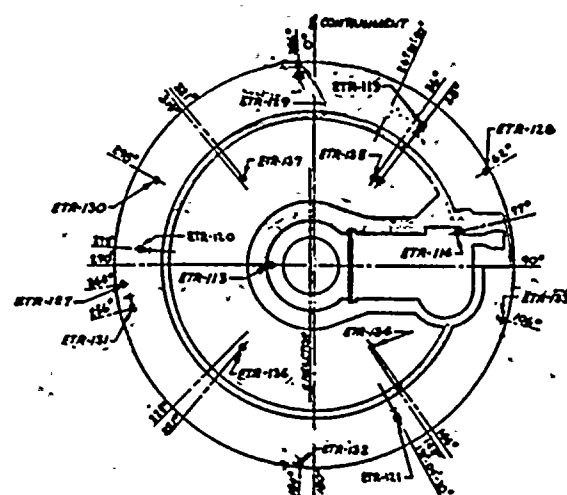
| | | |
|-----|-----------|----------|
| 101 | 0° | 74°-0' |
| 102 | 15°-0' | 74°-0' |
| 103 | 30°-0' | 72°-0' |
| 104 | " | " |
| 105 | 45°-15' | 70°-0' |
| 106 | " | " |
| 107 | " | " |
| 108 | " | " |
| 109 | 28°-0' | 673°-0' |
| 110 | " | " |
| 111 | 21°-0' | " |
| 112 | " | " |
| 113 | 15°-0' | 657°-15' |
| 114 | 45°-6' | " |
| 115 | 57°-6' | 705°-0' |
| 116 | 44°-6' | " |
| 117 | 44°-6' | " |
| 118 | 57°-6' | " |
| 119 | 50°-6'44" | 645°-16" |
| 120 | " | " |
| 121 | " | " |
| 122 | 31°-0' | 680°-0' |
| 123 | " | " |
| 124 | 32°-0' | " |
| 125 | " | " |
| 126 | 31°-3' | 684°-10' |
| 127 | 55°-0' | 615°-45' |
| 128 | 57°-6' | 618°-0' |
| 129 | " | 620°-6' |
| 130 | 50°-6' | 614°-15' |
| 131 | 55°-6' | 619°-0' |
| 132 | 57°-6' | 620°-0' |
| 133 | " | 618°-0' |
| 134 | 29°-0' | 614°-45' |
| 135 | 30°-0' | " |
| 136 | 31°-0' | " |
| 137 | " | " |
| 138 | 37°-0' | 604°-0' |
| 139 | 44°-6' | 599°-10' |
| 140 | 57°-6' | 603°-0' |
| 141 | " | " |
| 142 | " | " |
| 143 | " | " |
| 144 | " | " |
| 145 | " | " |
| 146 | 21°-6' | 579°-0' |

PLAN 'D'

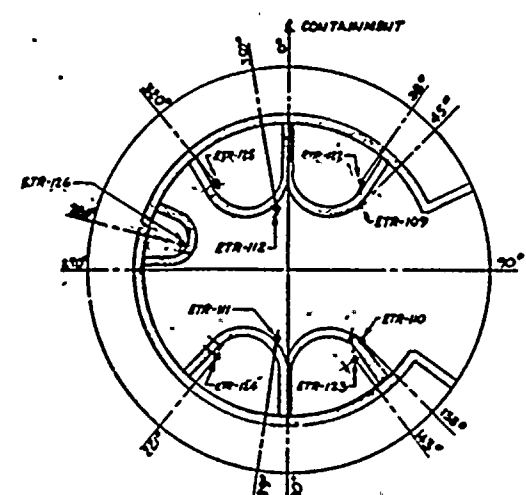
PLAN 'C'

PLAN 'B'

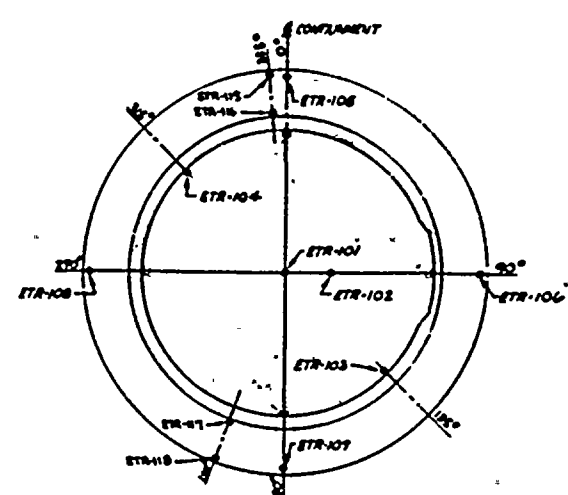
PLAN 'A'



PLAN 'A' - A.D. 528°-9'K'

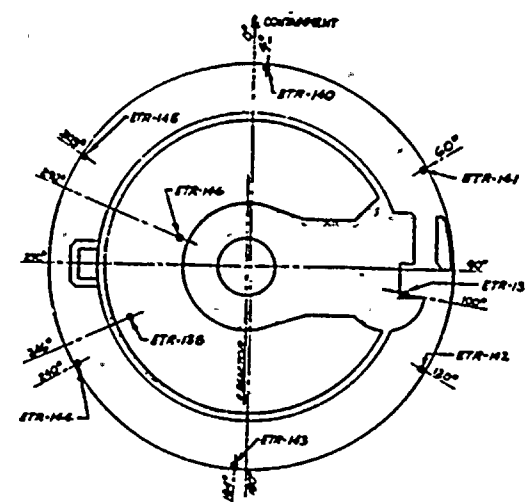


PLAN 'B' - B.D. 62°-0'



PLAN 'C' - C.D. 652°-74'

Sketch, Table 1
Temperature Sensing
Points in Containment



PLAN 'D' - D.D. 74°-8°-0'

TABLE 2

Penetrations not in Post L.O.C.A. alignment for the Integrated Rate Test.

| PENETRATION | SYSTEM | LEAKAGE PENALTY
(SCCM) |
|-------------|-------------------------|---------------------------|
| CPN-17, 21 | NESW to Ventilation | 0 |
| CPN-18, 22 | NESW to Ventilation | 156.9 |
| CPN-19, 23 | NESW to Ventilation | 50.1 |
| CPN-20, 24 | NESW to Ventilation | 0 |
| CPN-26 | NESW to Ventilation | 0 |
| CPN-26 | NESW to RCP Coolers | 151.1 |
| CPN-27 | NESW to Ventilation | 0 |
| CPN-73 | NESW to Ventilation | 0 |
| CPN-73 | NESW to Ventilation | 0 |
| CPN-84 | NESW to Ventilation | 0 |
| CPN-85 | NESW to RCP Coolers | 0 |
| CPN-85 | NESW to Ventilation | 20.3 |
| CPN-85 | NESW to RCP Coolers | 100.4 |
| CPN-15 | ECCS Safeties Discharge | 20.1 |
| CPN-40 | RCDT Pump Line | 0 |

TABLE 2 (cont.)

| PENETRATION | SYSTEM | LEAKAGE PENALTY
(SCCM) |
|------------------------|------------------------------------------------------|---------------------------|
| CPN-32 | Accumulator Test Line | 0 |
| CPN-44 | BIT Outlet Valves | 755.8 |
| CPN-11, 12, 13, 14 | RCP Seal Injection Lines | 20.1 |
| CPN-34 | RCS Letdown | 0 |
| CPN-37 | Seal Water Return | 30.2 |
| CPN-43, 60 | SI Pump Discharge | 0 |
| CPN-67 | P.A.S.S. Sump Sample | 0 |
| CPN-35 | RCS - Charging | 155.4 |
| CPN-56, 66 | Ice Condenser Coding | 0 |
| CPN-91, 92, 94, 96, 97 | Containment Pressure
Instruments | 20.1 |
| CPN-57, 80 | Spare Penetrations used
to Pressurize Containment | 0 |
| CPN-1 | Refueling Tube | 0 |

Total Leakage Penalty
Connected to 60°F

1480.5 SCCM
x 1.02

1510 SCCM

Expressed in % wt/day = .0034% wt/day

TABLE 3

REPAIRED VALVE PENALTYTYPE B LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|------------------------------------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 001 | 612' Air Lock | | Leakage Penalty = 1358.3 | 1451.3 | 93 |
| | 2902.6 | 186 | | | |
| 002 | 650' Air Lock | | Leakage Penalty = 1304.9 | 1335.1 | 30.2 |
| | 2670.1 | 60.4 | | | |
| 003 | Zone 3 Penetrations | | Leakage Penalty = 35 | 35 | 0.0 |
| | 70.0 | 0.0 | | | |
| 004 | Zone 4 Penetrations | | Leakage Penalty
Zone 4 is not a
containment boundary | 1494.4 | 70.6 |
| | 1494.4 | 70.6 | | | |

TABLE 3

REPAIRED VALVE PENALTY

TYPE B LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 005 | Fuel Transfer Blind Flange | | 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 007 | Ice Loading Blind Flange
CPN-57 | | 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 008 | Ice Loading Blind Flange
CPN-80 | | Leakage Penalty = 12.5 | 12.5 | 0.0 |
| | 25.0 | 0.0 | | | |
| 009 | Flux Thimble Handling | | Leakage Penalty = 141.3 | 201.3 | 60.0 |
| | 402.6 | 119.9 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE B LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 010 | Spare Penetration CPN-67 | | Leakage Penalty = 0 | 0.0 | 30.2 |
| | 0.0 | 30.2 | | | |
| 011 | 650' Equipment Hatch Ring
Body Flange Seal | | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 012 | 650' Airlock Equipment
Hatch Cover Flange Seal | | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 001 | CLV #1 WCR-900, WCR-902 | | Ref. Test Step C-002 | N/A | N/A |
| | 0.0 | 173.6 | | | |
| 002 | CLV #1 WCR-901, WCR-903 | | Leakage Penalty = 0.0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 003 | CLV #4 WCR-912, WCR-914 | | Ref Test Step C-004 | N/A | N/A |
| | 0.0 | 60.5 | | | |
| 004 | CLV #4 WCR-913, WCR-915 | | Leakage Penalty 0.0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 005 | CUV #1 WCR-920, WCR-922 | | Leakage Penalty = 56.3 | 56.3 | 0.0 |
| | 56.3 | 0.0 | | | |
| 006 | CUV #1 WCR-921, WCR-923 | | Ref Test Step C-005 | N/A | N/A |
| | 76.2 | 135.2 | | | |
| 007 | CUV #4 WCR-932, WCR-934 | | Ref Test Step C-008 | 30.1 | N/A |
| | 30.1 | 49.1 | | | |
| 008 | CUV #4 WCR-933, WCR-935 | | Leakage Penalty = 30.1 | N/A | 0.0 |
| | 60.3 | 0.0 | | | |



TABLE 3

REPAIRED VALVE PENALTY

TYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 009 | RCP #1 WCR-941.
Mtr. Cooler WCR-945 | | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 010 | RCP #1 WCR-951
MTR. Cooler WCR-955 | | Ref. Test Step C-009 | N/A | N/A |
| | 0.0 | 0.0 | | | |
| 011 | RCP #4 WCR-944
Mtr. Cooler WCR-948 | | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 012 | RCP #4 WCR-954
Mtr. Cooler WCR-958 | | Ref. Test Step C-011 | N/A | N/A |
| | 0.0 | 0.0 | | | |

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TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 013 | CLV #2 WCR-904, WCR-906 | | Leakage Penalty = 0 | 0.0 | 156.9 |
| | 0.0 | 156.9 | | | |
| 014 | CLV #2 WCR-905, WCR-907 | | Ref. Test Step C-013 | N/A | N/A |
| | 20.1 | 276.8 | | | |
| 015 | CLV #3 WCR-908, WCR-910 | | Ref. Test Step C-016 | N/A | N/A |
| | 20.0 | 211.0 | | | |
| 016 | CLV #3 WCR-909, WCR-911 | | Leakage Penalty = 0 | 0.0 | 50.1 |
| | 0.0 | 50.1 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 017 | CUV #2 WCR-924, WCR-926 | | Ref. Test Step C-018 | N/A | N/A |
| | 0.0 | 100.9 | | | |
| 018 | CUV #2 WCR-925, WCR-927 | | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 019 | CUV #3 WCR-928, WCR-930 | | Leakage Penalty = 0 | 20.1 | 20.3 |
| | 20.1 | 20.3 | | | |
| 020 | CUV #3 WCR-929, WCR-931 | | Ref. Test Step C-019 | N/A | N/A |
| | 20.1 | 45.6 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 021 | RCP #2
Mtr. Cooler | WCR-942
WCR-946 | Ref. Test Step C-022 | N/A | N/A |
| | 0.0 | 201.5 | | | |
| 022 | RCP #2
Mtr. Cooler | WCR-952
WCR-956 | Leakage Penalty = 0 | 0.0 | 151.1 |
| | 0.0 | 151.1 | | | |
| 023 | RCP #3
Mtr. Cooler | WCR-943
WCR-947 | Ref. Test Step C-024 | N/A | N/A |
| | 0.0 | 100.4 | | | |
| 024 | RCP #3
Mtr. Cooler | WCR-953
WCR-957 | Leakage Penalty = 0 | 0.0 | 100.4 |
| | 0.0 | 100.4 | | | |



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TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 025 | Inst. Rm. WCR-960
East WCR-962 | | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 026 | Inst. Rm. WCR-961
East WCR-963 | | Ref. Test Step C-025 | N/A | N/A |
| | 20.0 | 0.0 | | | |
| 027 | Inst. Rm. WCR-964
West WCR-966 | | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 028 | Inst. Rm. WCR-965
West WCR-967 | | Ref. Test Step C-027 | N/A | N/A |
| | 20.1 | 0.0 | | | |



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15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 029 | Inst. Rm. VCR-101
Supply 612' VCR-201 | | Leakage Penalty = 22.35 | 34.85 | 12.5 |
| | 69.7 | 25.0 | | | |
| 030 | Inst. Rm. VCR-102
Exhaust 612' VCR-202 | | Leakage Penalty = 29.35 | 79.75 | 50.4 |
| | 159.5 | 100.8 | | | |
| 031 | Lower Supply VCR-103
633' VCR-203 | | Leakage Penalty = 0 | 0.0 | 50.0 |
| | 0.0 | 100.0 | | | |
| 032 | Lower VCR-104
Exh. 633' VCR-204 | | Leakage Penalty = 0 | 162.05 | 300.3 |
| | 324.1 | 600.6 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 033 | Upper
Supply 650' | VCR-105
VCR-205 | Leakage Penalty = 0 | 57.95 | 57.95 |
| | 16,904.9 | 115.9 | | | |
| 034 | Upper
Exh. 650' | VCR-106
VCR-206 | Leakage Penalty = 208.5 | 408.3 | 199.8 |
| | 816.6 | 399.6 | | | |
| 035 | Press Equal
650' | VCR-107
VCR-207 | Leakage Penalty = 0 | 17.5 | 845.95 |
| | 35.0 | 1691.9 | | | |
| 036 | H ₂ Return Line | ECR-10, ECR-20 | Leakage Penalty = 0 | 20.1 | 20.2 |
| | 20.1 | 20.2 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 037 | ESR-1 | ECR-11, ECR-21 | Leakage Penalty = 10.05 | 10.05 | 0.0 |
| | 20.1 | 0.0 | | | |
| 038 | ESR-2 | ECR-12, ECR-22 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 039 | ESR-3 | ECR-13, ECR-23 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 040 | ESR-4 | ECR-14, ECR-24 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |



TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 041 | ESR-5 | ECR-15, ECR-25 | Leakage Penalty = 0.0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 042 | ESR-6 | ECR-16, ECR-26 | Leakage Penalty = 0.0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 043 | ESR-7 | ECR-17, ECR-27 | Leakage Penalty = 0.0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 044 | ESR-8 | ECR-18, ECR-28 | Leakage Penalty = 0.05 | 10.05 | 10.0 |
| | 20.1 | 20.0 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 045 | ESR-9 | ECR-19, ECR-29 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 046 | RCP #1
Seal H ₂ O | CS-442-1 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 047 | RCP #4
Seal H ₂ O | CS-442-4 | Leakage Penalty = 401.6 | 401.6 | 0.0 |
| | 401.6 | 0.0 | | | |
| 048 | RCP #2
Seal H ₂ O | CS-442-2 | Leakage Penalty = 0 | 0.0 | 20.1 |
| | 0.0 | 20.1 | | | |

TABLE 3

REPAIRED VALVE PENALTY

TYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 049 | RCP #3
Seal H ₂ O | CS-442-3 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 050 | Relief Valve
Hdr to PRT | SI-189 | Leakage Penalty = 0 | 0.0 | 20.1 |
| | 0.0 | 20.1 | | | |
| 051 | Air Part/
Rad. Gas Mon. | SM-1 | Ref. Test Step C-124 | N/A | N/A |
| | 40.0 | 0.0 | | | |
| 052 | N ₂ to
Accumulators | N-102 | Ref. Test Step C-086 | N/A | N/A |
| | 50.0 | 55.1 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|------------------------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 053 | N ₂ to PRT | N-159 | Ref. Test Step C-085
Leakage Penalty = 40.2 | 40.2 | 0.0 |
| | 40.2 | 0.0 | | | |
| 054 | PW to PRT | PW-275 | Ref. Test Step C-088 | N/A | N/A |
| | 19.9 | 20.0 | | | |
| 055 | Chg to Regen
Hx | CS-321 | Leakage Penalty = 45.2 | 200.6 | 155.4 |
| | 200.6 | 155.4 | | | |
| 056 | Dead Weight
Calibrator | NPX-151-V1 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 057 | Glycol Supply | VCR-10, VCR-11 | Leakage Penalty = 50.1 | 50.1 | 0.0 |
| | 100.2 | 0.0 | | | |
| 058 | Glycol Return | VCR-20, VCR-21 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 059 | N ₂ and Vent
Hdr for RCDT | DCR-203
DCR-207 | Leakage Penalty = 0 | 0.0 | 50.2 |
| | 0.0 | 54.5 | | | |
| 060 | N ₂ and Vent
Hdr for RCDT | N-160
DCR-201 | Ref. Test Step C-059 | N/A | N/A |
| | 89.1 | 50.2 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 061 | Ice Cond. AHU
Drain Hdr | DCR-611
DCR-610 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 062 | CLV and CUV
Drain Hdr. | DCR-620
DCR-621 | Leakage Penalty = 9.95 | 9.95 | 0.0 |
| | 19.9 | 0.0 | | | |
| 063 | RCDT Drain Hdr | DCR-205
DCR-206 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 064 | Cont. Sump to
Holdup Tanks | DCR-600
DCR-601 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |



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TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 065 | Letdown | QCR-300 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 066 | Letdown | QCR-301 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 067 | RCP Seal H ₂ O
Return | QCM-250
QCM-350 | Leakage Penalty = 0 | 29.8 | 30.15 |
| | 59.6 | 60.3 | | | |
| 068 | RHR Recirc. 'E' | ICM-305 | Leakage Penalty = 23.95 | 99.15 | 75.2 |
| | 198.3 | 150.4 | | | |



TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 069 | RHR Recirc. 'W' ICM-306 | | Leakage Penalty = .178.35 | 248.3 | 69.95 |
| | 496.6 | 139.9 | | | |
| 070 | PW for Rx
Cav. Scrub | QCR-919
QCR-920 | Leakage Penalty = 54.5 | 54.5 | 0.0 |
| | 109.0 | 0.0 | | | |
| 071 | Refueling H ₂ O
to Rx Cav. | SF-152
SF-154 | Leakage Penalty = 0 | 0.0 | 39.8 |
| | 0.0 | 79.6 | | | |
| 072 | Refueling Cav.
Drain | SF-159
SF-160 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 43,000 | 0.0 | | | |



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TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 073 | NSX-101, 103
Hot Leg Samples | NCR-105
NCR-106 | Leakage Penalty = 0 | 0.0 | 10.0 |
| | 0.0 | 20.0 | | | |
| 074 | NSX-102
Press Liq Sample | NCR-107
NCR-108 | Leakage Penalty = 9.95 | 9.95 | 0.0 |
| | 19.9 | 0.0 | | | |
| 075 | NSX-104 Press
Steam Sample | NCR-109
NCR-110 | Leakage Penalty = 9.95 | 9.95 | 0.0 |
| | 19.9 | 0.0 | | | |
| 076 | NSI-52
PRT Sample | RCR-100
RCR-101 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |



TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 077 | DSI-200
RCDT Sample | DCR-202
DCR-204 | Leakage Penalty = 29.85 | 29.85 | 0.0 |
| | 59.7 | 0.0 | | | |
| 078 | ISX-1, 2, 3, 4
ACCum. Samples | ICR-5
ICR-6 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 079 | Air Part
Rad. Gas Mon. | ECR-33
ECR-35 | Leakage Penalty = 0 | 49.5 | 69.8 |
| | 99.0 | 139.5 | | | |
| 080 | N SI Disch | ICM-260 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |



TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 081 | S SI Disch | ICM-265 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 082 | Air Part./
Rad. Gas Mon. | ECR-31
ECR-32 | Leakage Penalty = 39.95 | 39.95 | 0.0 |
| | 79.9 | 0.0 | | | |
| 083 | Control Air to
Cont. | XCR-100
XCR-101 | Leakage Penalty = 0 | 20.1 | 20.2 |
| | 20.1 | 20.2 | | | |
| 084 | Control Air to
Cont. | XCR-102
XCR-103 | Ref. Test Step C-129 | N/A | N/A |
| | 50.0 | 40.1 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 085 | N ₂ to PRT | GCR-301 | Ref. Test Step C-053 | N/A | N/A |
| | 50.0 | 50.5 | | | |
| 086 | N ₂ to Accumulators | GCR-314 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 087 | Safety Inj.
Test Line | SI-171,
172, 194 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 088 | PW to PRT | NCR-252 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |



TABLE 3

REPAIRED VALVE PENALTY
TYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 089 | CCW to and from
RCP Oil Clrs/
ther. bar | CCM-452
454
458 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | unquantifiable | 0.0 | | | |
| 090 | CCW to and from
RCP Oil Clrs/
ther. bar | CCM-451
453
459 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 6506.1 | 0.0 | | | |
| 091 | CCW to and from
Rx supports | CCR-460
CCR-462 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 216.4 | 230.2 | | | |
| 092 | CCW to and from
Rx supports | CCR-457
CCW-135 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 45042.5 | 0.0 | | | |



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TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 093 | CCW to and from
Rx Supports | CCR-455
CCR-456 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 0.0 | 0.0 | | | |
| 094 | Grab Sample | SM-4, SM-6 | Leakage Penalty = 20.15 | 20.15 | 0.0 |
| | 40.3 | 0.0 | | | |
| 095 | Cont. Press
ΦA, ΦB Isol. | PPP-300 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 096 | Cont. Press
ΦA, ΦB Isol. | PPP-301 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 097 | Cont. Press
ΦA, ΦB Isol. | PPP-302 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 098 | Cont. Press
ΦA, ΦB Isol. | PPP-303 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 099 | Cont. Press
Alarm | PPA-310
PPA-311 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 100 | Cont. Press
Alarm | PPA-312
PPA-313 | Leakage Penalty = 0 | 0.0 | 20.1 |
| | 0.0 | 20.1 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 101 | Boron Injection | ICM-251 | Leakage Penalty = 0 | 119.65 | 352.35 |
| | 239.3 | 704.7 | | | |
| 102 | Boron Injection | ICM-250 | Leakage Penalty = 0 | 109.5 | 403.4 |
| | 219.0 | 806.8 | | | |
| 103 | Weld Chan Press | CA-181S | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 104 | Weld Chan Press | CA-181N | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 105 | Grab Sample | SM-8
SM-10 | Leakage Penalty = 10.05 | 10.05 | 0.0 |
| | 20.1 | 0.0 | | | |
| 106 | CCW to CPN
Coils 2 & 5 (E) | CCW-243-25 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 0.0 | 20.2 | | | |
| 107 | CCW to CPN
Coils 2 & 5 (E) | CCW-244-25 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 50.2 | 202.1 | | | |
| 108 | CCW to CPN
Coils 3 & 4 (W) | CCW-243-72 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 0.0 | 151.3 | | | |

TABLE 3
REPAIRED VALVE PENALTY
TYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 109 | CCW tp CPN
Coils 3 & 4 (W) | CCW-244-72 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 20.0 | 110.9 | | | |
| 110 | CCW to CEQ-1 | CCM-430 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 0.0 | 0.0 | | | |
| 111 | CCW from CEQ-1 | CCM-431 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 114.0 | 0.0 | | | |
| 112 | CCW from CPN
Coils 2 & 5 | CCR-440 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 45.0 | 0.0 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 113 | CCW to CEQ-2 | CCM-432 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 0.0 | 0.0 | | | |
| 114 | CCW to CEQ-2 | CCM-433 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 0.0 | 121.0 | | | |
| 115 | CCW from CPN
Coils 3 & 4 | CCR-441 | Component Cooling Water is
a Seismic Class 1 system
forming a closed loop inside
containment and is not
considered open to POST LOCA
containment. | N/A | N/A |
| | 19.9 | 60.6 | | | |
| 116 | Glycol Supply
Expansion | R-156 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-------------------------------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 117 | Glycol Return
Expansion | R-157 | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 118 | Post Accident Sampling
Return Check Valve (NS-357) | | Leakage Penalty = 0 | 0.0 | 50.1 |
| | 0.0 | 50.1 | | | |
| 119 | Post Accident Sampling
Return Isolation Valves
(ECR-496, ECR-497) | | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 120 | Post Accident Sampling
Supply Isolation Valve
(ECR-416) | | Ref. Test Step C-121 | N/A | N/A |
| | 0.0 | 50.1 | | | |



TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 121 | Post Accident Sampling
Supply (ECR-417) | | Leakage Penalty = 0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |
| 122 | Containment Sampling
(ECR-535) | | Leakage Penalty = 0 | 19.9 | 20.1 |
| | 19.9 | 20.1 | | | |
| 123 | Containment Sampling
(ECR-536) | | Ref. Test Step C-122 | N/A | N/A |
| | 27.9 | 30.1 | | | |
| 124 | Air Particle Rad. Gas
Mon. Return (ECR-36) | | Leakage Penalty = 0 | 0.0 | 50.3 |
| | 0.0 | 50.3 | | | |

TABLE 3

REPAIRED VALVE PENALTYTYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 125 | Plant Air to Containment
(PCR-40) | | Leakage Penalty = 88.7 | 118.7 | 30.0 |
| | 124.4 | 30.0 | | | |
| 126 | Plant Air to Containment
(Check Valve) | | Ref. Test Step C-125 | N/A | N/A |
| | 118.7 | 90.9 | | | |
| 127 | Hydrogen Sample Return
Check Valve NS-283 | | Ref. Test Step C-036 | N/A | N/A |
| | 598.3 | 50.6 | | | |
| 128 | Control Air
To Cont. XCR-101 | | Ref. Test Step C-083 | N/A | N/A |
| | 20.1 | 34.9 | | | |

TABLE 3

REPAIRED VALVE PENALTY

TYPE C LEAK TEST LIST

| TEST
STEP | ISOLATION BARRIERS
Calibration Corrected Leakage | | Minimum Pathway Leakage | | |
|--------------|-----------------------------------------------------|---------------------------|---------------------------------|-------------------------------|------------------------------|
| | As Found Leakage
(sccm) | As Left Leakage
(sccm) | Comments
and
Calculations | As Found
Leakage
(sccm) | As Left
Leakage
(sccm) |
| 129 | Control Air
To Cont. XCR-103 | | Leakage Penalty = .0 | 0.0 | 0.0 |
| | 0.0 | 0.0 | | | |

APPENDIX A
ILRT COMPUTER PROGRAM SUMMARY

ATEST PROGRAM SUMMARY

1.0 INTRODUCTION

The Type A Test is an integrated leakage rate test (ILRT) designed to verify the leak test integrity of the entire containment building. This test is performed as approximately three-year intervals as required by Appendix J of 10 CFR 50. It is performed in accordance with the American National Standard "Containment System Leakage Testing Requirements," (ANSI/ANS-56.8-1987), American National Standard "Leakage Rate Testing of Primary Containment for Nuclear Power Plants," (ANSI N45.4-1972), and the Bechtel Topical Report "Testing Criteria for Integrated Leakage Rate Testing of Nuclear Power Plants," (BN-TOP-1, Rev. 1-1972).

The ATEST program computes total time leakage rates, mass point leakage rates, LSF leakage rates, and 95% upper confidence level (UCL) leakage rates during the course of the test from input measured values of containment pressure, temperature and dew point.

The ATEST program is also capable of performing the verification phase and will generate specific verifications features to aid in verifying the Type A test.

The program is designed to automate the task of sampling and reducing the data to a usable form in accordance with the above documents. This greatly limits the possibility of human error and provides intermediate results after a short delay. This makes it possible to monitor the progress of the test very closely in approximately real time. For each of the two test periods, the ATEST program samples the containment's environment and calculates the values needed to assess the status of the test. Interim results are provided as desired and the program checks to see if the acceptance criteria have been satisfied for the two test periods. The program also produces a printout of all data gathered as well as a record of its calculations. In addition, the data is stored on hard or floppy computer disks for future reference. The program can recover from a power failure or any other accidental interruptions of the program's execution by reloading the old data and restarting the data sampling routine at the proper location. Lastly, should one of the RTDs fail during the test, the program will detect the problem and the user can remove that sensor from further calculations. When the test is completed, the program has the ability to recalculate all values for the test, suppressing any failed sensors or instruments from the entire series of calculations.

ATEST is written in a high level language (QuickBASIC) and is designed for use on a micro-computer with direct data input from the data acquisition system. Brief descriptions of program use, formulae used for leakage rate computations, and program logic are provided in the following sections.

一、本行自成立以來，承蒙各界愛護，業務日見發達。茲為擴大服務起見，特在各地設立分行，以資便利。凡有存款、放款、匯兌等項，無不竭誠服務。特此公告。

中華民國二十二年一月一日

2.0 EXPLANATION OF PROGRAM

The ATEST computer program is written, for use by experienced ILRT personnel, to determine containment integrated leakage rates based on the Absolute Method described in ANSIN45.4-1972, ANSI/ANS 56.8-1987, and BN-TOP-1.

Information loaded into the program prior to or at the start of the test:

- a. Number of containment atmosphere drybulb temperature sensors, dew point temperature (water vapor pressure) sensors and pressure gages to be used in leakage rate computations for the specific test.
- b. Volume fractions assigned to each of the above sensors.
- c. Calibration data for above sensors.
- d. Test title.
- e. Test pressure.
- f. Maximum available leakage rate at test pressure.

Data recorded from the data acquisition system during the test, and used to compute leakage rates:

- a. Time and date.
- b. Containment atmosphere drybulb temperatures.
- c. Containment atmosphere pressure(s).
- d. Containment atmosphere dew point temperatures.
- e. Containment free air volume.

If an instrument or sensor should fail during the test, the data from the sensor is not used. The volume fractions for the remaining sensors are recomputed and reloaded into the program for use in ensuing leakage rate computations.

3.0 PROGRAM LOGIC AND OPERATION SUMMARY

The ATEST computer program logic flow is controlled by a set of user options after executive questions. The user options and a brief description of their associated function are presented below:

| | |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LOG ON/OFF | Allows for the use of the data acquisition system for electronic entry and permanent recording of data. Conversely, this toggle can suspend the entry/recording process. |
| AUTO/MANUAL | This key (de)activates the automatic data entry and allows manual entry. |

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| MAINT | Provides for maintenance of the data, calibration, and weighting factor files. Its features include defining weighting factors, changing the time increment of logging data, deleting a file record, displaying a record's average environmental contents, and changes the individual record's content. This key has several sub-tiers. |
| INPUT | Provides for either an pre-arranged manual entry(s) or in the MANUAL mode, the method to input the recorded data. |
| REPORTS | This key performs the calculations of program and prints the results. This key has several sub-tiers. |
| PLOTS | This function implements the graphics portion of the program. Any channel or leakage rate can be plotted. This key has several sub-tiers. |
| END JOB | This key will properly terminate the program. |

4.0 COMPUTER REPORTS AND PLOTS

4.1 Reports

REPORTS does the analysis of the data accumulated by the ILRT system and then prints out a report of the results. The types of analysis performed are: mass point, total time, environmental averages, mass loss, temperature stabilization, and data rejection. All results from the analysis are printed off a thermal printer. The subprogram REPORTS requires the user to select a valid time window or record window as listed below as a prerequisite for doing analysis.

| | |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SENSOR LIST | This report outputs all the sensor data for the selected records. |
| MASS LOSS | The mass loss analysis is based on the ANSI/ANS 56.8-1987 Standard acceptance criteria and calculations. |
| TEMP STAB | The temperature stabilization analysis is based on the Bechtel Topical Report (BN-TOP-1) and the ANSI/ANS 56.8-1987 Standard with their respective acceptance criteria and calculations. |



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DATA REJECTION The data rejection analysis is based on the Bechtel Topical Report (BN-TOP-1) and the ANSI/ANS 56.8-1987 Standard, Appendix D, with their respective acceptance criteria and calculations.

TOTAL TIME The total time analysis is based on the Bechtel Topical Report (BN-TOP-1) and its acceptance criteria and calculations.

MASS POINT The mass point analysis is based on the ANSI/ANS 56.8-1987 Standard acceptance criteria and calculations.

ENVIRONMENT The environment analysis is based on the Bechtel Topical Report (BN-TOP-1) and the ANSI/ANS 56.8-1987 Standard with their respective acceptance criteria and calculations.

POINT TO POINT The point to point analysis is based on the ANSI N45.4-1972 Standard and its acceptance criteria and calculations.

4.2 Plots

The Graphics subprogram allows the user to plot the mass point analysis, total time analysis, and displayed channels. Further, plots can be made in a batch mode by instrument type to a printer or a plotter. PLOTS performs autoranging on the data being plotted for axes values. PLOTS requires the user to select any valid time window or record window as a prerequisite for doing plotting.

APPENDIX B
STABILIZATION DATA & CALCULATIONS

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TEMPERATURE STABILIZATION

DATE - 03-17-1989

TIME - 09:38:27

| TIME
(DELTA)
(HOURS) | TEMP | TEMP
DIFF
INCR | TEMP
AVG
(1 HR) | BN-TOP-1
AVG
(2 HR) | BN-TOP-1
RATE
(2 HR) | TEMP
AVG
(4 HR) | ANSI
CRIT |
|----------------------------|---------|----------------------|-----------------------|---------------------------|----------------------------|-----------------------|--------------|
| 0.00 | 523.909 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 0.25 | 523.335 | -0.575 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 0.50 | 523.032 | -0.303 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 0.75 | 522.793 | -0.238 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1.00 | 522.587 | -0.207 | 523.248 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1.25 | 522.454 | -0.133 | 522.894 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1.50 | 522.320 | -0.133 | 522.676 | 0.000 | 0.000 | 0.000 | 0.000 |
| 1.75 | 522.196 | -0.125 | 522.495 | 0.000 | 0.000 | 0.000 | 0.000 |
| 2.00 | 522.075 | -0.121 | 522.331 | -0.917 | 0.917 | 0.000 | 0.000 |
| 2.25 | 521.970 | -0.105 | 522.212 | -0.682 | 0.682 | 0.000 | 0.000 |
| 2.50 | 521.880 | -0.090 | 522.100 | -0.576 | 0.576 | 0.000 | 0.000 |
| 2.75 | 521.797 | -0.083 | 521.996 | -0.498 | 0.498 | 0.000 | 0.000 |
| 3.00 | 521.710 | -0.087 | 521.893 | -0.438 | 0.438 | 0.000 | 0.000 |
| 3.25 | 521.619 | -0.092 | 521.794 | -0.418 | 0.418 | 0.000 | 0.000 |
| 3.50 | 521.559 | -0.059 | 521.720 | -0.381 | 0.381 | 0.000 | 0.000 |
| 3.75 | 521.486 | -0.073 | 521.641 | -0.355 | 0.355 | 0.000 | 0.000 |
| 4.00 | 521.412 | -0.074 | 521.561 | -0.331 | 0.331 | -0.624 | 0.326 |
| 4.25 | 521.337 | -0.075 | 521.478 | -0.316 | 0.316 | -0.499 | 0.218 |
| 4.50 | 521.276 | -0.061 | 521.417 | -0.302 | 0.302 | -0.439 | 0.156 |
| 4.75 | 521.212 | -0.064 | 521.349 | -0.292 | 0.292 | -0.395 | 0.122 |
| 5.00 | 521.152 | -0.060 | 521.282 | -0.279 | 0.279 | -0.359 | 0.099 |

APPENDIX C
TYPE A SUMMARY DATA

By Sensor
Enviroment
Mass Loss

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SENSOR LIST

RECORD NUMBER - 52

DATE - 011

TIME - 20: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.70500 | 2 - | 26.70400 |
| 3 - | 26.70600 | 4 - | 26.70700 |
| 5 - | 26.72400 | 6 - | 26.71200 |

AVG PRESSURE 26.70687

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 69.013 | 2 | 67.964 | 3 | 68.577 | 4 | 68.726 |
| 5 | 69.299 | 6 | 68.807 | 7 | 68.252 | 8 | 68.379 |
| 9 | 67.688 | 10 | 67.197 | 11 | 68.464 | 12 | 68.768 |
| 13 | 74.022 | 14 | 66.700 | 15 | 18.374 | 16 | 18.752 |
| 17 | 18.120 | 18 | 19.103 | 19 | 17.249 | 20 | 15.979 |
| 21 | 18.023 | 22 | 72.927 | 23 | 70.465 | 24 | 70.426 |
| 25 | 70.823 | 26 | 70.865 | 27 | 64.477 | 28 | 65.010 |
| 29 | 62.728 | 30 | 66.841 | 31 | 64.962 | 32 | 66.075 |
| 33 | 67.473 | 34 | 68.287 | 35 | 69.507 | 36 | 69.101 |
| 37 | 68.636 | 38 | 66.005 | 39 | 69.233 | 40 | 67.960 |
| 41 | 63.722 | 42 | 68.292 | 43 | 65.389 | 44 | 63.323 |
| 45 | 65.202 | 46 | 64.974 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 61.434

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 34.706 | 2 | 34.628 | 3 | 34.145 | 4 | 18.995 |
| 5 | 35.635 | 6 | 32.517 | 7 | 18.623 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 31.893

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.814366E-02

DRY PRESSURE - 26.61872

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 53

DATE - 011

TIME - 20:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.70200 | 2 - | 26.70100 |
| 3 - | 26.70300 | 4 - | 26.70400 |
| 5 - | 26.72100 | 6 - | 26.70900 |

AVG PRESSURE 26.70387

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 68.921 | 2 | 67.835 | 3 | 68.480 | 4 | 68.629 |
| 5 | 69.172 | 6 | 68.765 | 7 | 68.144 | 8 | 68.271 |
| 9 | 67.594 | 10 | 67.089 | 11 | 68.444 | 12 | 68.617 |
| 13 | 74.022 | 14 | 66.626 | 15 | 18.266 | 16 | 18.614 |
| 17 | 18.174 | 18 | 19.145 | 19 | 17.238 | 20 | 15.979 |
| 21 | 17.926 | 22 | 72.927 | 23 | 70.474 | 24 | 70.426 |
| 25 | 70.803 | 26 | 70.888 | 27 | 64.477 | 28 | 64.987 |
| 29 | 62.697 | 30 | 66.818 | 31 | 64.928 | 32 | 65.967 |
| 33 | 67.484 | 34 | 68.222 | 35 | 69.455 | 36 | 69.124 |
| 37 | 68.724 | 38 | 65.971 | 39 | 69.222 | 40 | 68.003 |
| 41 | 63.726 | 42 | 68.382 | 43 | 65.427 | 44 | 63.328 |
| 45 | 65.207 | 46 | 64.967 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 61.373

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 34.502 | 2 | 34.511 | 3 | 33.978 | 4 | 14.977 |
| 5 | 35.535 | 6 | 32.513 | 7 | 18.663 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 31.630

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.708955E-02

DRY PRESSURE - 26.61678

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 54

DATE - 011

TIME - 20:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.69800 | 2 - | 26.69600 |
| 3 - | 26.69900 | 4 - | 26.70000 |
| 5 - | 26.71600 | 6 - | 26.70500 |

AVG PRESSURE 26.69950

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 68.797 | 2 | 67.774 | 3 | 68.344 | 4 | 68.547 |
| 5 | 69.094 | 6 | 68.692 | 7 | 68.063 | 8 | 68.156 |
| 9 | 67.515 | 10 | 67.093 | 11 | 68.286 | 12 | 68.567 |
| 13 | 74.049 | 14 | 66.565 | 15 | 18.177 | 16 | 18.757 |
| 17 | 18.018 | 18 | 18.754 | 19 | 17.307 | 20 | 15.983 |
| 21 | 18.130 | 22 | 72.927 | 23 | 70.474 | 24 | 70.426 |
| 25 | 70.814 | 26 | 70.888 | 27 | 64.446 | 28 | 64.976 |
| 29 | 62.685 | 30 | 66.818 | 31 | 64.939 | 32 | 66.001 |
| 33 | 67.430 | 34 | 68.233 | 35 | 69.422 | 36 | 69.047 |
| 37 | 68.627 | 38 | 65.982 | 39 | 69.190 | 40 | 67.971 |
| 41 | 63.713 | 42 | 68.366 | 43 | 65.454 | 44 | 63.303 |
| 45 | 65.182 | 46 | 64.942 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 61.323

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 34.400 | 2 | 34.300 | 3 | 33.948 | 4 | 17.922 |
| 5 | 35.436 | 6 | 32.315 | 7 | 18.619 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 31.648

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.715934E-02

DRY PRESSURE - 26.61234

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 55

DATE - 011

TIME - 20:45:26

PRESSURES

| | | | | | |
|---|---|----------|---|---|----------|
| 1 | - | 26.69500 | 2 | - | 26.69400 |
| 3 | - | 26.69600 | 4 | - | 26.69800 |
| 5 | - | 26.71300 | 6 | - | 26.70200 |

AVG PRESSURE 26.69694

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 68.720 | 2 | 67.700 | 3 | 68.304 | 4 | 68.473 |
| 5 | 68.963 | 6 | 68.575 | 7 | 67.957 | 8 | 68.115 |
| 9 | 67.418 | 10 | 66.987 | 11 | 68.223 | 12 | 68.472 |
| 13 | 74.006 | 14 | 66.524 | 15 | 18.284 | 16 | 18.898 |
| 17 | 17.986 | 18 | 18.531 | 19 | 17.330 | 20 | 15.994 |
| 21 | 17.969 | 22 | 72.947 | 23 | 70.497 | 24 | 70.437 |
| 25 | 70.846 | 26 | 70.931 | 27 | 64.403 | 28 | 64.922 |
| 29 | 62.674 | 30 | 66.787 | 31 | 64.928 | 32 | 65.958 |
| 33 | 67.430 | 34 | 68.190 | 35 | 69.401 | 36 | 69.047 |
| 37 | 68.551 | 38 | 65.951 | 39 | 69.168 | 40 | 67.951 |
| 41 | 63.690 | 42 | 68.355 | 43 | 65.400 | 44 | 63.292 |
| 45 | 65.171 | 46 | 64.942 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 61.268

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 34.201 | 2 | 34.217 | 3 | 33.540 | 4 | 16.241 |
| 5 | 35.025 | 6 | 32.212 | 7 | 18.620 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 31.362

AMBIENT PRESS - 14.461

VAPOR PRESS - .0860239

DRY PRESSURE - 26.61091

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 56

DATE - 011

TIME - 21: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.69300 | 2 - | 26.69100 |
| 3 - | 26.69300 | 4 - | 26.69500 |
| 5 - | 26.71000 | 6 - | 26.70000 |

AVG PRESSURE 26.69430

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 68.612 | 2 | 67.596 | 3 | 68.211 | 4 | 68.295 |
| 5 | 68.886 | 6 | 68.474 | 7 | 67.864 | 8 | 68.000 |
| 9 | 67.418 | 10 | 66.872 | 11 | 68.174 | 12 | 68.402 |
| 13 | 73.979 | 14 | 66.441 | 15 | 18.311 | 16 | 19.116 |
| 17 | 18.035 | 18 | 18.385 | 19 | 17.323 | 20 | 16.001 |
| 21 | 18.034 | 22 | 72.947 | 23 | 70.497 | 24 | 70.448 |
| 25 | 70.846 | 26 | 70.920 | 27 | 64.414 | 28 | 64.902 |
| 29 | 62.674 | 30 | 66.755 | 31 | 64.822 | 32 | 65.978 |
| 33 | 67.410 | 34 | 68.222 | 35 | 69.390 | 36 | 68.995 |
| 37 | 68.605 | 38 | 65.940 | 39 | 69.168 | 40 | 67.951 |
| 41 | 63.668 | 42 | 68.346 | 43 | 65.411 | 44 | 63.292 |
| 45 | 65.139 | 46 | 64.920 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 61.215

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 34.099 | 2 | 33.994 | 3 | 33.544 | 4 | 15.591 |
| 5 | 34.819 | 6 | 32.112 | 7 | 18.666 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 31.272

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.566872E-02

DRY PRESSURE - 26.60863

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 57

DATE - 011

TIME - 21:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.68900 | 2 - | 26.68800 |
| 3 - | 26.69000 | 4 - | 26.69200 |
| 5 - | 26.70700 | 6 - | 26.69600 |

AVG PRESSURE 26.69093

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 68.537 | 2 | 67.517 | 3 | 68.153 | 4 | 68.268 |
| 5 | 68.789 | 6 | 68.381 | 7 | 67.806 | 8 | 67.910 |
| 9 | 67.276 | 10 | 66.771 | 11 | 68.061 | 12 | 68.353 |
| 13 | 73.975 | 14 | 66.385 | 15 | 18.573 | 16 | 19.078 |
| 17 | 18.286 | 18 | 18.370 | 19 | 17.361 | 20 | 16.017 |
| 21 | 18.450 | 22 | 72.936 | 23 | 70.497 | 24 | 70.457 |
| 25 | 70.857 | 26 | 70.920 | 27 | 64.349 | 28 | 64.902 |
| 29 | 62.643 | 30 | 66.744 | 31 | 64.842 | 32 | 65.904 |
| 33 | 67.387 | 34 | 68.158 | 35 | 69.401 | 36 | 68.995 |
| 37 | 68.551 | 38 | 65.917 | 39 | 69.156 | 40 | 67.906 |
| 41 | 63.659 | 42 | 68.312 | 43 | 65.400 | 44 | 63.269 |
| 45 | 65.128 | 46 | 64.920 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 61.185

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 33.895 | 2 | 33.688 | 3 | 33.238 | 4 | 17.182 |
| 5 | 34.716 | 6 | 32.006 | 7 | 18.755 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 31.149

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.518855E-02

DRY PRESSURE - 26.60575

FLOWS - 0 0

TOTAL FLOW 0



100-100000-100000

100-100000-100000

100-100000-100000

100-100000-100000

100-100000-100000



SENSOR LIST

RECORD NUMBER - 58

DATE - 011

TIME - 21:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.68700 | 2 - | 26.68600 |
| 3 - | 26.68800 | 4 - | 26.69000 |
| 5 - | 26.70500 | 6 - | 26.69400 |

AVG PRESSURE 26.68893

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 68.456 | 2 | 67.441 | 3 | 68.065 | 4 | 68.193 |
| 5 | 68.730 | 6 | 68.327 | 7 | 67.709 | 8 | 67.791 |
| 9 | 67.217 | 10 | 66.802 | 11 | 68.018 | 12 | 68.278 |
| 13 | 73.986 | 14 | 66.351 | 15 | 18.573 | 16 | 18.875 |
| 17 | 18.094 | 18 | 18.274 | 19 | 17.361 | 20 | 16.005 |
| 21 | 18.407 | 22 | 72.947 | 23 | 70.562 | 24 | 70.480 |
| 25 | 70.900 | 26 | 70.951 | 27 | 64.371 | 28 | 64.879 |
| 29 | 62.697 | 30 | 66.744 | 31 | 64.854 | 32 | 65.947 |
| 33 | 67.376 | 34 | 68.213 | 35 | 69.401 | 36 | 68.995 |
| 37 | 68.562 | 38 | 65.917 | 39 | 69.136 | 40 | 67.951 |
| 41 | 63.643 | 42 | 68.362 | 43 | 65.407 | 44 | 63.265 |
| 45 | 65.123 | 46 | 64.915 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 61.145

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 33.789 | 2 | 33.594 | 3 | 33.234 | 4 | 13.994 |
| 5 | 34.415 | 6 | 31.907 | 7 | 18.712 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 30.955

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.443061E-02

DRY PRESSURE - 26.6045

FLOWS - 0 0

TOTAL FLOW 0



11-11-11

11-11-11

11-11-11

11-11-11

11-11-11



SENSOR LIST

RECORD NUMBER - 59

DATE - 011

TIME - 21:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.68500 | 2 - | 26.68400 |
| 3 - | 26.68600 | 4 - | 26.68700 |
| 5 - | 26.70200 | 6 - | 26.69200 |

AVG PRESSURE 26.68673

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 68.382 | 2 | 67.339 | 3 | 68.006 | 4 | 68.144 |
| 5 | 68.622 | 6 | 68.235 | 7 | 67.637 | 8 | 67.698 |
| 9 | 67.143 | 10 | 66.624 | 11 | 67.948 | 12 | 68.197 |
| 13 | 73.979 | 14 | 66.313 | 15 | 18.557 | 16 | 18.763 |
| 17 | 17.948 | 18 | 18.227 | 19 | 17.357 | 20 | 16.010 |
| 21 | 18.125 | 22 | 72.974 | 23 | 70.533 | 24 | 70.484 |
| 25 | 70.904 | 26 | 70.935 | 27 | 64.365 | 28 | 64.841 |
| 29 | 62.690 | 30 | 66.737 | 31 | 64.881 | 32 | 65.908 |
| 33 | 67.338 | 34 | 68.183 | 35 | 69.318 | 36 | 68.955 |
| 37 | 68.578 | 38 | 65.944 | 39 | 69.118 | 40 | 67.933 |
| 41 | 63.632 | 42 | 68.341 | 43 | 65.384 | 44 | 63.265 |
| 45 | 65.112 | 46 | 64.904 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 61.084

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 33.589 | 2 | 33.499 | 3 | 32.932 | 4 | 15.022 |
| 5 | 34.617 | 6 | 31.800 | 7 | 18.755 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 30.842

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.399354E-02

DRY PRESSURE - 26.60274

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 60

DATE - 011

TIME - 22: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.68100 | 2 - | 26.68000 |
| 3 - | 26.68200 | 4 - | 26.68300 |
| 5 - | 26.69800 | 6 - | 26.68800 |

AVG PRESSURE 26.68273

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 68.287 | 2 | 67.294 | 3 | 67.855 | 4 | 68.047 |
| 5 | 68.530 | 6 | 68.181 | 7 | 67.573 | 8 | 67.590 |
| 9 | 67.093 | 10 | 66.613 | 11 | 67.797 | 12 | 68.035 |
| 13 | 74.002 | 14 | 66.238 | 15 | 18.577 | 16 | 18.783 |
| 17 | 17.832 | 18 | 18.216 | 19 | 17.388 | 20 | 16.021 |
| 21 | 18.199 | 22 | 72.983 | 23 | 70.512 | 24 | 70.496 |
| 25 | 70.925 | 26 | 70.978 | 27 | 64.342 | 28 | 64.830 |
| 29 | 62.636 | 30 | 66.715 | 31 | 64.836 | 32 | 65.886 |
| 33 | 67.317 | 34 | 68.140 | 35 | 69.329 | 36 | 68.923 |
| 37 | 68.490 | 38 | 65.913 | 39 | 69.107 | 40 | 67.910 |
| 41 | 63.625 | 42 | 68.334 | 43 | 65.326 | 44 | 63.249 |
| 45 | 65.085 | 46 | 64.897 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 61.032

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 33.487 | 2 | 33.386 | 3 | 32.932 | 4 | 16.801 |
| 5 | 34.514 | 6 | 31.796 | 7 | 18.710 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 30.875

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.412262E-02

DRY PRESSURE - 26.59861

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 61

DATE - 011

TIME - 22:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.67900 | 2 - | 26.67800 |
| 3 - | 26.68000 | 4 - | 26.68200 |
| 5 - | 26.69600 | 6 - | 26.68600 |

AVG PRESSURE 26.68087

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 68.170 | 2 | 67.251 | 3 | 67.801 | 4 | 67.938 |
| 5 | 68.455 | 6 | 68.052 | 7 | 67.485 | 8 | 67.536 |
| 9 | 66.985 | 10 | 66.408 | 11 | 67.786 | 12 | 68.012 |
| 13 | 73.991 | 14 | 66.204 | 15 | 18.535 | 16 | 19.052 |
| 17 | 17.832 | 18 | 18.216 | 19 | 17.357 | 20 | 16.086 |
| 21 | 18.087 | 22 | 73.001 | 23 | 70.551 | 24 | 70.500 |
| 25 | 70.954 | 26 | 70.963 | 27 | 64.329 | 28 | 64.805 |
| 29 | 62.665 | 30 | 66.710 | 31 | 64.779 | 32 | 66.001 |
| 33 | 67.279 | 34 | 68.125 | 35 | 69.325 | 36 | 68.950 |
| 37 | 68.465 | 38 | 65.940 | 39 | 69.093 | 40 | 67.886 |
| 41 | 63.605 | 42 | 68.323 | 43 | 65.346 | 44 | 63.249 |
| 45 | 65.085 | 46 | 64.888 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.992

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 33.291 | 2 | 33.314 | 3 | 32.626 | 4 | 11.784 |
| 5 | 34.312 | 6 | 31.693 | 7 | 18.708 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 30.501

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.268736E-02

DRY PRESSURE - 26.59818

FLOWS - 0 0

TOTAL FLOW 0

100-100000

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100-100000

SENSOR LIST

RECORD NUMBER - 62

DATE - 011

TIME - 22:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.67800 | 2 - | 26.67600 |
| 3 - | 26.67900 | 4 - | 26.68000 |
| 5 - | 26.69500 | 6 - | 26.68400 |

AVG PRESSURE 26.67937

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 68.104 | 2 | 67.143 | 3 | 67.736 | 4 | 67.862 |
| 5 | 68.390 | 6 | 68.009 | 7 | 67.389 | 8 | 67.482 |
| 9 | 66.963 | 10 | 66.473 | 11 | 67.655 | 12 | 67.958 |
| 13 | 74.153 | 14 | 66.130 | 15 | 18.535 | 16 | 19.371 |
| 17 | 17.875 | 18 | 18.216 | 19 | 17.410 | 20 | 16.097 |
| 21 | 18.407 | 22 | 73.001 | 23 | 70.562 | 24 | 70.534 |
| 25 | 70.954 | 26 | 71.017 | 27 | 64.295 | 28 | 64.751 |
| 29 | 62.632 | 30 | 66.690 | 31 | 64.799 | 32 | 66.021 |
| 33 | 67.301 | 34 | 68.170 | 35 | 69.325 | 36 | 68.907 |
| 37 | 68.508 | 38 | 65.928 | 39 | 69.082 | 40 | 67.809 |
| 41 | 63.593 | 42 | 68.312 | 43 | 65.369 | 44 | 63.226 |
| 45 | 65.062 | 46 | 64.888 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.974

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 33.189 | 2 | 32.990 | 3 | 32.630 | 4 | 15.825 |
| 5 | 34.312 | 6 | 31.602 | 7 | 18.806 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 30.604

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.308103E-02

DRY PRESSURE - 26.59628

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 63

DATE - 011

TIME - 22:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.67300 | 2 - | 26.67200 |
| 3 - | 26.67400 | 4 - | 26.67500 |
| 5 - | 26.69000 | 6 - | 26.68000 |

AVG PRESSURE 26.67473

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 68.039 | 2 | 67.123 | 3 | 67.616 | 4 | 67.753 |
| 5 | 68.347 | 6 | 67.912 | 7 | 67.303 | 8 | 67.299 |
| 9 | 66.845 | 10 | 66.345 | 11 | 67.635 | 12 | 67.807 |
| 13 | 74.259 | 14 | 66.065 | 15 | 18.481 | 16 | 19.639 |
| 17 | 18.355 | 18 | 18.365 | 19 | 17.430 | 20 | 16.128 |
| 21 | 18.248 | 22 | 73.024 | 23 | 70.562 | 24 | 70.534 |
| 25 | 70.965 | 26 | 71.028 | 27 | 64.274 | 28 | 64.751 |
| 29 | 62.665 | 30 | 66.690 | 31 | 64.822 | 32 | 65.881 |
| 33 | 67.236 | 34 | 68.136 | 35 | 69.270 | 36 | 68.907 |
| 37 | 68.485 | 38 | 65.928 | 39 | 69.071 | 40 | 67.906 |
| 41 | 63.582 | 42 | 68.323 | 43 | 65.380 | 44 | 63.226 |
| 45 | 65.051 | 46 | 64.877 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG. RTD 60.930

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 33.083 | 2 | 32.900 | 3 | 32.426 | 4 | 14.749 |
| 5 | 34.110 | 6 | 31.491 | 7 | 18.755 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 30.428

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.240979E-02

DRY PRESSURE - 26.59232

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 64

DATE - 011

TIME - 23: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.67200 | 2 - | 26.67100 |
| 3 - | 26.67300 | 4 - | 26.67500 |
| 5 - | 26.68900 | 6 - | 26.67900 |

AVG PRESSURE 26.67386

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.965 | 2 | 67.003 | 3 | 67.605 | 4 | 67.733 |
| 5 | 68.248 | 6 | 67.858 | 7 | 67.229 | 8 | 67.268 |
| 9 | 66.834 | 10 | 66.354 | 11 | 67.547 | 12 | 67.818 |
| 13 | 74.325 | 14 | 66.022 | 15 | 18.374 | 16 | 19.458 |
| 17 | 18.496 | 18 | 18.439 | 19 | 17.430 | 20 | 16.097 |
| 21 | 18.076 | 22 | 73.024 | 23 | 70.551 | 24 | 70.545 |
| 25 | 70.965 | 26 | 71.028 | 27 | 64.263 | 28 | 64.708 |
| 29 | 62.623 | 30 | 66.667 | 31 | 64.799 | 32 | 65.989 |
| 33 | 67.236 | 34 | 68.116 | 35 | 69.270 | 36 | 68.907 |
| 37 | 68.465 | 38 | 65.885 | 39 | 69.050 | 40 | 67.863 |
| 41 | 63.559 | 42 | 68.292 | 43 | 65.380 | 44 | 63.226 |
| 45 | 65.040 | 46 | 64.888 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.892

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 32.891 | 2 | 32.692 | 3 | 32.231 | 4 | 15.730 |
| 5 | 34.007 | 6 | 31.393 | 7 | 18.755 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 30.323

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.201393E-02

DRY PRESSURE - 26.59185

FLOWS - 0 0

TOTAL FLOW 0



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SENSOR LIST

RECORD NUMBER - 65

DATE - 011

TIME - 23:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.67100 | 2 - | 26.66900 |
| 3 - | 26.67100 | 4 - | 26.67300 |
| 5 - | 26.68700 | 6 - | 26.67700 |

AVG PRESSURE 26.67216

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.877 | 2 | 66.961 | 3 | 67.562 | 4 | 67.636 |
| 5 | 68.151 | 6 | 67.847 | 7 | 67.174 | 8 | 67.256 |
| 9 | 66.780 | 10 | 66.268 | 11 | 67.515 | 12 | 67.721 |
| 13 | 74.359 | 14 | 65.999 | 15 | 18.374 | 16 | 19.394 |
| 17 | 18.496 | 18 | 18.557 | 19 | 17.442 | 20 | 16.128 |
| 21 | 18.264 | 22 | 73.017 | 23 | 70.598 | 24 | 70.550 |
| 25 | 70.970 | 26 | 71.044 | 27 | 64.299 | 28 | 64.724 |
| 29 | 62.605 | 30 | 66.652 | 31 | 64.750 | 32 | 65.886 |
| 33 | 67.220 | 34 | 68.098 | 35 | 69.329 | 36 | 68.858 |
| 37 | 68.447 | 38 | 65.879 | 39 | 69.032 | 40 | 67.825 |
| 41 | 63.559 | 42 | 68.301 | 43 | 65.380 | 44 | 63.215 |
| 45 | 65.031 | 46 | 64.866 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.869

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 32.786 | 2 | 32.704 | 3 | 32.049 | 4 | 16.055 |
| 5 | 33.904 | 6 | 31.404 | 7 | 18.757 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 30.257

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.176447E-02

DRY PRESSURE - 26.5904

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 66

DATE - 011

TIME - 23:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.66700 | 2 - | 26.66500 |
| 3 - | 26.66700 | 4 - | 26.66900 |
| 5 - | 26.68300 | 6 - | 26.67300 |

AVG PRESSURE 26.66817

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.834 | 2 | 66.907 | 3 | 67.433 | 4 | 67.602 |
| 5 | 68.097 | 6 | 67.761 | 7 | 67.098 | 8 | 67.117 |
| 9 | 66.715 | 10 | 66.248 | 11 | 67.441 | 12 | 67.636 |
| 13 | 74.368 | 14 | 65.956 | 15 | 18.512 | 16 | 19.222 |
| 17 | 18.378 | 18 | 19.145 | 19 | 17.464 | 20 | 16.193 |
| 21 | 18.398 | 22 | 73.033 | 23 | 70.616 | 24 | 70.554 |
| 25 | 70.965 | 26 | 71.059 | 27 | 64.252 | 28 | 64.676 |
| 29 | 62.623 | 30 | 66.658 | 31 | 64.757 | 32 | 65.861 |
| 33 | 67.182 | 34 | 68.093 | 35 | 69.293 | 36 | 68.865 |
| 37 | 68.411 | 38 | 65.843 | 39 | 69.028 | 40 | 67.843 |
| 41 | 63.550 | 42 | 68.301 | 43 | 65.357 | 44 | 63.215 |
| 45 | 65.008 | 46 | 64.854 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.837

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 32.582 | 2 | 32.610 | 3 | 32.148 | 4 | 14.742 |
| 5 | 33.698 | 6 | 31.286 | 7 | 18.759 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 30.161

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.140137E-02

DRY PRESSURE - 26.58676

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 67

DATE - 011

TIME - 23:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.66500 | 2 - | 26.66400 |
| 3 - | 26.66600 | 4 - | 26.66700 |
| 5 - | 26.68100 | 6 - | 26.67100 |

AVG PRESSURE 26.66660

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.757 | 2 | 66.841 | 3 | 67.357 | 4 | 67.528 |
| 5 | 68.043 | 6 | 67.653 | 7 | 67.023 | 8 | 67.051 |
| 9 | 66.649 | 10 | 66.149 | 11 | 67.353 | 12 | 67.593 |
| 13 | 74.216 | 14 | 65.914 | 15 | 18.566 | 16 | 19.063 |
| 17 | 18.378 | 18 | 19.382 | 19 | 17.442 | 20 | 16.267 |
| 21 | 17.873 | 22 | 73.067 | 23 | 70.594 | 24 | 70.577 |
| 25 | 71.017 | 26 | 71.091 | 27 | 64.220 | 28 | 64.665 |
| 29 | 62.623 | 30 | 66.636 | 31 | 64.768 | 32 | 65.924 |
| 33 | 67.193 | 34 | 68.062 | 35 | 69.293 | 36 | 68.844 |
| 37 | 68.422 | 38 | 65.831 | 39 | 68.996 | 40 | 67.854 |
| 41 | 63.539 | 42 | 68.292 | 43 | 65.335 | 44 | 63.215 |
| 45 | 65.008 | 46 | 64.854 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.781

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 32.575 | 2 | 32.496 | 3 | 31.838 | 4 | 15.397 |
| 5 | 33.393 | 6 | 31.293 | 7 | 18.849 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 30.066

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.104866E-02

DRY PRESSURE - 26.58555

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 68

DATE - 012

TIME - 0: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.66300 | 2 - | 26.66200 |
| 3 - | 26.66400 | 4 - | 26.66500 |
| 5 - | 26.68000 | 6 - | 26.67000 |

AVG PRESSURE 26.66473

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.703 | 2 | 66.805 | 3 | 67.321 | 4 | 67.438 |
| 5 | 67.946 | 6 | 67.606 | 7 | 66.976 | 8 | 67.013 |
| 9 | 66.584 | 10 | 66.124 | 11 | 67.295 | 12 | 67.554 |
| 13 | 74.115 | 14 | 65.844 | 15 | 18.541 | 16 | 18.940 |
| 17 | 18.436 | 18 | 19.375 | 19 | 17.457 | 20 | 16.274 |
| 21 | 17.873 | 22 | 73.076 | 23 | 70.625 | 24 | 70.577 |
| 25 | 71.008 | 26 | 71.082 | 27 | 64.187 | 28 | 64.654 |
| 29 | 62.623 | 30 | 66.636 | 31 | 64.745 | 32 | 66.010 |
| 33 | 67.162 | 34 | 68.050 | 35 | 69.304 | 36 | 68.865 |
| 37 | 68.368 | 38 | 65.811 | 39 | 68.985 | 40 | 67.854 |
| 41 | 63.528 | 42 | 68.292 | 43 | 65.335 | 44 | 63.195 |
| 45 | 64.997 | 46 | 64.854 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.747

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 32.375 | 2 | 32.281 | 3 | 31.842 | 4 | 17.323 |
| 5 | 33.291 | 6 | 31.084 | 7 | 18.847 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 30.040

AMBIENT PRESS - 14.461

VAPOR PRESS - .0809496

DRY PRESSURE - 26.58378

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 69

DATE - 012

TIME - 0:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.65900 | 2 - | 26.65800 |
| 3 - | 26.66000 | 4 - | 26.66100 |
| 5 - | 26.67600 | 6 - | 26.66600 |

AVG PRESSURE 26.66073

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.660 | 2 | 66.733 | 3 | 67.240 | 4 | 67.377 |
| 5 | 67.914 | 6 | 67.565 | 7 | 66.893 | 8 | 66.921 |
| 9 | 66.552 | 10 | 66.075 | 11 | 67.236 | 12 | 67.451 |
| 13 | 74.045 | 14 | 65.774 | 15 | 18.396 | 16 | 18.868 |
| 17 | 18.335 | 18 | 19.188 | 19 | 17.453 | 20 | 16.267 |
| 21 | 17.938 | 22 | 73.087 | 23 | 70.648 | 24 | 70.588 |
| 25 | 71.051 | 26 | 71.091 | 27 | 64.220 | 28 | 64.643 |
| 29 | 62.623 | 30 | 66.613 | 31 | 64.811 | 32 | 65.989 |
| 33 | 67.128 | 34 | 68.082 | 35 | 69.261 | 36 | 68.853 |
| 37 | 68.388 | 38 | 65.843 | 39 | 68.974 | 40 | 67.897 |
| 41 | 63.496 | 42 | 68.301 | 43 | 65.315 | 44 | 63.195 |
| 45 | 64.986 | 46 | 64.845 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.707

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 32.179 | 2 | 32.088 | 3 | 31.743 | 4 | 15.497 |
| 5 | 33.595 | 6 | 30.981 | 7 | 18.804 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 29.870

AMBIENT PRESS - 14.461

VAPOR PRESS - 8.031589E-02

DRY PRESSURE - 26.58042

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 70

DATE - 012

TIME - 0:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.65800 | 2 - | 26.65600 |
| 3 - | 26.65800 | 4 - | 26.66000 |
| 5 - | 26.67400 | 6 - | 26.66400 |

AVG PRESSURE 26.65916

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.575 | 2 | 66.681 | 3 | 67.251 | 4 | 67.269 |
| 5 | 67.849 | 6 | 67.437 | 7 | 66.827 | 8 | 66.857 |
| 9 | 66.498 | 10 | 65.966 | 11 | 67.193 | 12 | 67.419 |
| 13 | 74.022 | 14 | 65.751 | 15 | 18.416 | 16 | 18.913 |
| 17 | 18.109 | 18 | 18.707 | 19 | 17.453 | 20 | 16.309 |
| 21 | 17.980 | 22 | 73.110 | 23 | 70.636 | 24 | 70.609 |
| 25 | 71.029 | 26 | 71.091 | 27 | 64.209 | 28 | 64.589 |
| 29 | 62.611 | 30 | 66.625 | 31 | 64.671 | 32 | 65.870 |
| 33 | 67.096 | 34 | 68.073 | 35 | 69.282 | 36 | 68.822 |
| 37 | 68.411 | 38 | 65.843 | 39 | 68.953 | 40 | 67.831 |
| 41 | 63.496 | 42 | 68.292 | 43 | 65.326 | 44 | 63.195 |
| 45 | 64.977 | 46 | 64.845 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.664

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 32.088 | 2 | 31.915 | 3 | 31.532 | 4 | 14.465 |
| 5 | 33.191 | 6 | 30.988 | 7 | 18.896 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 29.718

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.975471E-02

DRY PRESSURE - 26.57941

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 71

DATE - 012

TIME - 0:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.65700 | 2 - | 26.65500 |
| 3 - | 26.65600 | 4 - | 26.65800 |
| 5 - | 26.67200 | 6 - | 26.66200 |

AVG PRESSURE 26.65776

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.520 | 2 | 66.616 | 3 | 67.163 | 4 | 67.226 |
| 5 | 67.752 | 6 | 67.448 | 7 | 66.753 | 8 | 66.781 |
| 9 | 66.433 | 10 | 65.955 | 11 | 67.159 | 12 | 67.376 |
| 13 | 74.002 | 14 | 65.720 | 15 | 18.416 | 16 | 19.041 |
| 17 | 18.067 | 18 | 18.428 | 19 | 17.473 | 20 | 16.343 |
| 21 | 17.810 | 22 | 73.110 | 23 | 70.668 | 24 | 70.631 |
| 25 | 71.062 | 26 | 71.125 | 27 | 64.166 | 28 | 64.589 |
| 29 | 62.569 | 30 | 66.604 | 31 | 64.671 | 32 | 65.967 |
| 33 | 67.096 | 34 | 68.093 | 35 | 69.270 | 36 | 68.833 |
| 37 | 68.357 | 38 | 65.800 | 39 | 68.942 | 40 | 67.809 |
| 41 | 63.485 | 42 | 68.280 | 43 | 65.335 | 44 | 63.184 |
| 45 | 64.977 | 46 | 64.845 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.627

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 31.982 | 2 | 31.783 | 3 | 31.332 | 4 | 12.492 |
| 5 | 33.191 | 6 | 30.988 | 7 | 18.806 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 29.533

AMBIENT PRESS - 14.461

VAPOR PRESS - .079076

DRY PRESSURE - 26.57869

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 72

DATE - 012

TIME - 1: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.65300 | 2 - | 26.65100 |
| 3 - | 26.65300 | 4 - | 26.65400 |
| 5 - | 26.66900 | 6 - | 26.65900 |

AVG PRESSURE 26.65403

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.466 | 2 | 66.573 | 3 | 67.109 | 4 | 67.172 |
| 5 | 67.686 | 6 | 67.362 | 7 | 66.676 | 8 | 66.803 |
| 9 | 66.390 | 10 | 65.847 | 11 | 67.074 | 12 | 67.291 |
| 13 | 73.968 | 14 | 65.686 | 15 | 18.374 | 16 | 19.148 |
| 17 | 18.185 | 18 | 18.300 | 19 | 17.453 | 20 | 16.374 |
| 21 | 17.768 | 22 | 73.153 | 23 | 70.668 | 24 | 70.642 |
| 25 | 71.105 | 26 | 71.125 | 27 | 64.144 | 28 | 64.589 |
| 29 | 62.578 | 30 | 66.604 | 31 | 64.637 | 32 | 65.924 |
| 33 | 67.053 | 34 | 68.073 | 35 | 69.228 | 36 | 68.844 |
| 37 | 68.357 | 38 | 65.777 | 39 | 68.931 | 40 | 67.820 |
| 41 | 63.474 | 42 | 68.269 | 43 | 65.292 | 44 | 63.184 |
| 45 | 64.977 | 46 | 64.845 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.594

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 31.877 | 2 | 31.599 | 3 | 31.230 | 4 | 14.088 |
| 5 | 32.989 | 6 | 30.683 | 7 | 18.941 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 29.463

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.882255E-02

DRY PRESSURE - 26.57521

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 73

DATE - 012

TIME - 1:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.65200 | 2 - | 26.65100 |
| 3 - | 26.65200 | 4 - | 26.65400 |
| 5 - | 26.66800 | 6 - | 26.65800 |

AVG PRESSURE 26.65346

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.390 | 2 | 66.496 | 3 | 67.034 | 4 | 67.095 |
| 5 | 67.655 | 6 | 67.274 | 7 | 66.656 | 8 | 66.661 |
| 9 | 66.336 | 10 | 65.838 | 11 | 67.008 | 12 | 67.214 |
| 13 | 73.968 | 14 | 65.677 | 15 | 18.599 | 16 | 18.772 |
| 17 | 18.047 | 18 | 18.162 | 19 | 17.464 | 20 | 16.396 |
| 21 | 17.665 | 22 | 73.157 | 23 | 70.695 | 24 | 70.647 |
| 25 | 71.087 | 26 | 71.129 | 27 | 64.171 | 28 | 64.550 |
| 29 | 62.562 | 30 | 66.586 | 31 | 64.675 | 32 | 65.940 |
| 33 | 67.047 | 34 | 68.001 | 35 | 69.232 | 36 | 68.849 |
| 37 | 68.361 | 38 | 65.782 | 39 | 68.861 | 40 | 67.782 |
| 41 | 63.463 | 42 | 68.301 | 43 | 65.292 | 44 | 63.172 |
| 45 | 64.954 | 46 | 64.834 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.551

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 31.772 | 2 | 31.489 | 3 | 31.128 | 4 | 15.495 |
| 5 | 32.986 | 6 | 30.786 | 7 | 18.896 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 29.475

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.886694E-02

DRY PRESSURE - 26.57459

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 74

DATE - 012

TIME - 1:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.65100 | 2 - | 26.64900 |
| 3 - | 26.65100 | 4 - | 26.65300 |
| 5 - | 26.66700 | 6 - | 26.65700 |

AVG PRESSURE 26.65216

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.347 | 2 | 66.431 | 3 | 67.001 | 4 | 67.041 |
| 5 | 67.567 | 6 | 67.254 | 7 | 66.591 | 8 | 66.715 |
| 9 | 66.250 | 10 | 65.773 | 11 | 66.911 | 12 | 67.191 |
| 13 | 74.011 | 14 | 65.600 | 15 | 18.523 | 16 | 18.580 |
| 17 | 17.799 | 18 | 18.055 | 19 | 17.473 | 20 | 16.417 |
| 21 | 17.687 | 22 | 73.157 | 23 | 70.695 | 24 | 70.679 |
| 25 | 71.087 | 26 | 71.150 | 27 | 64.191 | 28 | 64.539 |
| 29 | 62.562 | 30 | 66.575 | 31 | 64.621 | 32 | 66.005 |
| 33 | 67.026 | 34 | 68.012 | 35 | 69.221 | 36 | 68.815 |
| 37 | 68.341 | 38 | 65.773 | 39 | 68.850 | 40 | 67.813 |
| 41 | 63.463 | 42 | 68.258 | 43 | 65.315 | 44 | 63.172 |
| 45 | 64.954 | 46 | 64.834 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.521

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 31.678 | 2 | 31.403 | 3 | 30.933 | 4 | 18.204 |
| 5 | 32.787 | 6 | 30.477 | 7 | 18.804 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 29.408

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.862145E-02

DRY PRESSURE - 26.57354

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 75

DATE - 012

TIME - 1:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.64800 | 2 - | 26.64600 |
| 3 - | 26.64800 | 4 - | 26.65000 |
| 5 - | 26.66400 | 6 - | 26.65400 |

AVG PRESSURE 26.64916

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 67.261 | 2 | 66.411 | 3 | 66.958 | 4 | 67.009 |
| 5 | 67.513 | 6 | 67.123 | 7 | 66.516 | 8 | 66.576 |
| 9 | 66.239 | 10 | 65.676 | 11 | 66.966 | 12 | 67.128 |
| 13 | 74.162 | 14 | 65.569 | 15 | 18.385 | 16 | 18.442 |
| 17 | 17.629 | 18 | 17.959 | 19 | 17.518 | 20 | 16.428 |
| 21 | 17.676 | 22 | 73.177 | 23 | 70.727 | 24 | 70.679 |
| 25 | 71.119 | 26 | 71.184 | 27 | 64.128 | 28 | 64.476 |
| 29 | 62.573 | 30 | 66.566 | 31 | 64.590 | 32 | 65.908 |
| 33 | 66.984 | 34 | 67.989 | 35 | 69.221 | 36 | 68.869 |
| 37 | 68.330 | 38 | 65.782 | 39 | 68.838 | 40 | 67.750 |
| 41 | 63.451 | 42 | 68.280 | 43 | 65.303 | 44 | 63.163 |
| 45 | 64.943 | 46 | 64.823 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 60.485

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 31.573 | 2 | 31.392 | 3 | 30.831 | 4 | 14.090 |
| 5 | 33.089 | 6 | 30.470 | 7 | 18.802 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 29.203

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.788023E-02

DRY PRESSURE - 26.57128

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 76

DATE - 012

TIME - 2: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.64700 | 2 - | 26.64500 |
| 3 - | 26.64700 | 4 - | 26.64900 |
| 5 - | 26.66300 | 6 - | 26.65300 |

AVG PRESSURE 26.64816

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.250 | 2 | 66.357 | 3 | 66.915 | 4 | 66.944 |
| 5 | 67.481 | 6 | 67.211 | 7 | 66.451 | 8 | 66.564 |
| 9 | 66.217 | 10 | 65.653 | 11 | 66.857 | 12 | 67.117 |
| 13 | 74.282 | 14 | 65.515 | 15 | 18.320 | 16 | 18.710 |
| 17 | 17.575 | 18 | 17.916 | 19 | 17.518 | 20 | 16.513 |
| 21 | 17.654 | 22 | 73.222 | 23 | 70.738 | 24 | 70.679 |
| 25 | 71.141 | 26 | 71.226 | 27 | 64.148 | 28 | 64.519 |
| 29 | 62.530 | 30 | 66.555 | 31 | 64.707 | 32 | 66.059 |
| 33 | 66.972 | 34 | 68.023 | 35 | 69.266 | 36 | 68.806 |
| 37 | 68.296 | 38 | 65.793 | 39 | 68.838 | 40 | 67.750 |
| 41 | 63.442 | 42 | 68.269 | 43 | 65.272 | 44 | 63.163 |
| 45 | 64.932 | 46 | 64.823 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.480

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 31.478 | 2 | 31.199 | 3 | 30.835 | 4 | 14.889 |
| 5 | 32.783 | 6 | 30.267 | 7 | 18.898 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 29.153

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.769765E-02

DRY PRESSURE - 26.57047

FLOWS - 0 0

TOTAL FLOW 0

1

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SENSOR LIST

RECORD NUMBER - 77

DATE - 012

TIME - 2:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.64600 | 2 - | 26.64400 |
| 3 - | 26.64500 | 4 - | 26.64700 |
| 5 - | 26.66200 | 6 - | 26.65100 |

AVG PRESSURE 26.64683

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 67.218 | 2 | 66.291 | 3 | 66.861 | 4 | 66.901 |
| 5 | 67.405 | 6 | 67.112 | 7 | 66.386 | 8 | 66.510 |
| 9 | 66.142 | 10 | 65.599 | 11 | 66.846 | 12 | 67.074 |
| 13 | 74.271 | 14 | 65.515 | 15 | 18.289 | 16 | 18.967 |
| 17 | 17.564 | 18 | 17.851 | 19 | 17.473 | 20 | 16.493 |
| 21 | 17.580 | 22 | 73.211 | 23 | 70.749 | 24 | 70.710 |
| 25 | 71.153 | 26 | 71.215 | 27 | 64.117 | 28 | 64.487 |
| 29 | 62.530 | 30 | 66.555 | 31 | 64.772 | 32 | 65.962 |
| 33 | 66.918 | 34 | 68.012 | 35 | 69.212 | 36 | 68.772 |
| 37 | 68.318 | 38 | 65.773 | 39 | 68.827 | 40 | 67.793 |
| 41 | 63.442 | 42 | 68.280 | 43 | 65.292 | 44 | 63.163 |
| 45 | 64.923 | 46 | 64.823 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 60.442

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 31.369 | 2 | 31.071 | 3 | 30.827 | 4 | 16.011 |
| 5 | 32.780 | 6 | 30.370 | 7 | 18.847 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |

AVG DEW CELL 29.182

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.780365E-02

DRY PRESSURE - 26.56903

FLOWS - 0 0

TOTAL FLOW 0.



SENSOR LIST

RECORD NUMBER - 78

DATE - 012

TIME - 2:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.64300 | 2 - | 26.64100 |
| 3 - | 26.64200 | 4 - | 26.64500 |
| 5 - | 26.65900 | 6 - | 26.64900 |

AVG PRESSURE 26.64403

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 67.153 | 2 | 66.271 | 3 | 66.753 | 4 | 66.847 |
| 5 | 67.350 | 6 | 67.058 | 7 | 66.343 | 8 | 66.317 |
| 9 | 66.131 | 10 | 65.545 | 11 | 66.869 | 12 | 66.997 |
| 13 | 74.347 | 14 | 65.481 | 15 | 18.193 | 16 | 19.233 |
| 17 | 17.533 | 18 | 17.820 | 19 | 17.495 | 20 | 16.546 |
| 21 | 17.629 | 22 | 73.250 | 23 | 70.756 | 24 | 70.728 |
| 25 | 71.202 | 26 | 71.233 | 27 | 64.058 | 28 | 64.483 |
| 29 | 62.557 | 30 | 66.539 | 31 | 64.617 | 32 | 65.935 |
| 33 | 66.956 | 34 | 68.028 | 35 | 69.228 | 36 | 68.790 |
| 37 | 68.282 | 38 | 65.734 | 39 | 68.802 | 40 | 67.820 |
| 41 | 63.442 | 42 | 68.280 | 43 | 65.281 | 44 | 63.172 |
| 45 | 64.923 | 46 | 64.823 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 60.415

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 31.279 | 2 | 31.082 | 3 | 30.529 | 4 | 14.888 |
| 5 | 32.578 | 6 | 30.267 | 7 | 18.802 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.987

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.710503E-02

DRY PRESSURE - 26.56693

FLOWS - 0 0

TOTAL FLOW 0

42

43

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SENSOR LIST

RECORD NUMBER - 79

DATE - 012

TIME - 2:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.64200 | 2 - | 26.64000 |
| 3 - | 26.64100 | 4 - | 26.64300 |
| 5 - | 26.65800 | 6 - | 26.64700 |

AVG PRESSURE 26.64283

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.099 | 2 | 66.217 | 3 | 66.753 | 4 | 66.772 |
| 5 | 67.350 | 6 | 66.995 | 7 | 66.300 | 8 | 66.339 |
| 9 | 66.054 | 10 | 65.525 | 11 | 66.749 | 12 | 66.923 |
| 13 | 74.336 | 14 | 65.427 | 15 | 18.012 | 16 | 19.083 |
| 17 | 18.067 | 18 | 17.927 | 19 | 17.506 | 20 | 16.524 |
| 21 | 17.558 | 22 | 73.265 | 23 | 70.781 | 24 | 70.753 |
| 25 | 71.184 | 26 | 71.258 | 27 | 64.094 | 28 | 64.453 |
| 29 | 62.519 | 30 | 66.543 | 31 | 64.707 | 32 | 65.886 |
| 33 | 66.907 | 34 | 68.001 | 35 | 69.221 | 36 | 68.772 |
| 37 | 68.221 | 38 | 65.762 | 39 | 68.784 | 40 | 67.793 |
| 41 | 63.431 | 42 | 68.258 | 43 | 65.326 | 44 | 63.163 |
| 45 | 64.911 | 46 | 64.823 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.389

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 31.169 | 2 | 31.071 | 3 | 30.529 | 4 | 15.962 |
| 5 | 32.578 | 6 | 30.164 | 7 | 18.896 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.997

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.714155E-02

DRY PRESSURE - 26.56569

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 80

DATE - 012

TIME - 3: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.64100 | 2 - | 26.63900 |
| 3 - | 26.64000 | 4 - | 26.64200 |
| 5 - | 26.65700 | 6 - | 26.64600 |

AVG PRESSURE 26.64183

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 67.045 | 2 | 66.140 | 3 | 66.698 | 4 | 66.750 |
| 5 | 67.242 | 6 | 66.929 | 7 | 66.235 | 8 | 66.308 |
| 9 | 66.023 | 10 | 65.482 | 11 | 66.729 | 12 | 66.880 |
| 13 | 74.359 | 14 | 65.418 | 15 | 17.989 | 16 | 18.944 |
| 17 | 18.024 | 18 | 18.032 | 19 | 17.518 | 20 | 16.577 |
| 21 | 17.522 | 22 | 73.281 | 23 | 70.799 | 24 | 70.748 |
| 25 | 71.202 | 26 | 71.265 | 27 | 64.090 | 28 | 64.429 |
| 29 | 62.546 | 30 | 66.539 | 31 | 64.648 | 32 | 66.032 |
| 33 | 66.914 | 34 | 67.985 | 35 | 69.207 | 36 | 68.779 |
| 37 | 68.271 | 38 | 65.757 | 39 | 68.791 | 40 | 67.800 |
| 41 | 63.420 | 42 | 68.292 | 43 | 65.260 | 44 | 63.163 |
| 45 | 64.900 | 46 | 64.823 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.364

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 31.071 | 2 | 30.807 | 3 | 30.329 | 4 | 15.640 |
| 5 | 32.475 | 6 | 30.267 | 7 | 18.806 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.885

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.673953E-02

DRY PRESSURE - 26.56509

FLOWS - 0 .0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 81

DATE - 012

TIME - 3:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.63800 | 2 - | 26.63600 |
| 3 - | 26.63700 | 4 - | 26.63900 |
| 5 - | 26.65400 | 6 - | 26.64300 |

AVG PRESSURE 26.63883

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 67.045 | 2 | 66.098 | 3 | 66.635 | 4 | 66.696 |
| 5 | 67.188 | 6 | 66.907 | 7 | 66.180 | 8 | 66.242 |
| 9 | 65.980 | 10 | 65.448 | 11 | 66.632 | 12 | 66.869 |
| 13 | 74.336 | 14 | 65.375 | 15 | 17.893 | 16 | 18.710 |
| 17 | 18.002 | 18 | 18.204 | 19 | 17.506 | 20 | 16.577 |
| 21 | 17.511 | 22 | 73.304 | 23 | 70.799 | 24 | 70.782 |
| 25 | 71.223 | 26 | 71.296 | 27 | 64.038 | 28 | 64.438 |
| 29 | 62.526 | 30 | 66.539 | 31 | 64.606 | 32 | 66.055 |
| 33 | 66.882 | 34 | 67.996 | 35 | 69.207 | 36 | 68.768 |
| 37 | 68.217 | 38 | 65.746 | 39 | 68.748 | 40 | 67.809 |
| 41 | 63.408 | 42 | 68.269 | 43 | 65.272 | 44 | 63.163 |
| 45 | 64.889 | 46 | 64.811 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 60.334

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.969 | 2 | 30.683 | 3 | 30.123 | 4 | 12.159 |
| 5 | 32.578 | 6 | 30.275 | 7 | 18.800 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.653

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.592111E-02

DRY PRESSURE - 26.56291

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 82

DATE - 012

TIME - 3:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.63600 | 2 - | 26.63400 |
| 3 - | 26.63500 | 4 - | 26.63800 |
| 5 - | 26.65300 | 6 - | 26.64200 |

AVG PRESSURE 26.63710

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.968 | 2 | 66.075 | 3 | 66.592 | 4 | 66.642 |
| 5 | 67.168 | 6 | 66.810 | 7 | 66.138 | 8 | 66.166 |
| 9 | 65.937 | 10 | 65.351 | 11 | 66.598 | 12 | 66.835 |
| 13 | 74.313 | 14 | 65.341 | 15 | 18.096 | 16 | 18.560 |
| 17 | 17.810 | 18 | 18.814 | 19 | 17.506 | 20 | 16.620 |
| 21 | 17.526 | 22 | 73.297 | 23 | 70.835 | 24 | 70.787 |
| 25 | 71.261 | 26 | 71.301 | 27 | 64.085 | 28 | 64.433 |
| 29 | 62.539 | 30 | 66.521 | 31 | 64.610 | 32 | 65.971 |
| 33 | 66.832 | 34 | 67.989 | 35 | 69.189 | 36 | 68.752 |
| 37 | 68.244 | 38 | 65.728 | 39 | 68.741 | 40 | 67.793 |
| 41 | 63.397 | 42 | 68.258 | 43 | 65.260 | 44 | 63.163 |
| 45 | 64.889 | 46 | 64.811 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.310

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.876 | 2 | 30.596 | 3 | 30.126 | 4 | 13.242 |
| 5 | 32.475 | 6 | 30.164 | 7 | 18.894 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.654

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.592253E-02

DRY PRESSURE - 26.56118

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 83

DATE - 012

TIME - 3:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.63500 | 2 - | 26.63300 |
| 3 - | 26.63400 | 4 - | 26.63700 |
| 5 - | 26.65200 | 6 - | 26.64100 |

AVG PRESSURE 26.63610

RTD/S

| | | | |
|-------------|-------------|-------------|-------------|
| 1 66.925 | 2 66.023 | 3 66.527 | 4 66.588 |
| 5 67.114 | 6 66.735 | 7 66.138 | 8 66.134 |
| 9 65.914 | 10 65.320 | 11 66.652 | 12 66.792 |
| 13 74.401 | 14 65.287 | 15 17.989 | 16 18.357 |
| 17 17.778 | 18 18.792 | 19 17.526 | 20 16.673 |
| 21 17.504 | 22 73.328 | 23 70.815 | 24 70.807 |
| 25 71.270 | 26 71.290 | 27 64.094 | 28 64.422 |
| 29 62.530 | 30 66.512 | 31 64.513 | 32 65.940 |
| 33 66.853 | 34 67.989 | 35 69.178 | 36 68.761 |
| 37 68.264 | 38 65.719 | 39 68.730 | 40 67.813 |
| 41 63.397 | 42 68.280 | 43 65.292 | 44 63.152 |
| 45 64.889 | 46 64.811 | INACT 0.000 | INACT 0.000 |
| INACT 0.000 | INACT 0.000 | | |

AVG RTD 60.288

DEW CELLS

| | | | |
|-------------|-------------|-------------|-------------|
| 1 30.767 | 2 30.578 | 3 30.228 | 4 13.241 |
| 5 32.680 | 6 29.970 | 7 18.755 | INACT 0.000 |
| INACT 0.000 | INACT 0.000 | INACT 0.000 | INACT 0.000 |
| INACT 0.000 | INACT 0.000 | INACT 0.000 | |

AVG DEW CELL 28.622

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.580925E-02

DRY PRESSURE - 26.56029

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 84

DATE - 012

TIME - 4: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.63300 | 2 - | 26.63100 |
| 3 - | 26.63200 | 4 - | 26.63400 |
| 5 - | 26.64900 | 6 - | 26.63800 |

AVG PRESSURE 26.63383

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.905 | 2 | 66.012 | 3 | 66.493 | 4 | 66.502 |
| 5 | 67.071 | 6 | 66.681 | 7 | 66.052 | 8 | 66.080 |
| 9 | 65.860 | 10 | 65.254 | 11 | 66.555 | 12 | 66.684 |
| 13 | 74.379 | 14 | 65.276 | 15 | 17.913 | 16 | 18.165 |
| 17 | 17.756 | 18 | 18.814 | 19 | 17.538 | 20 | 16.727 |
| 21 | 17.515 | 22 | 73.328 | 23 | 70.866 | 24 | 70.818 |
| 25 | 71.293 | 26 | 71.312 | 27 | 64.031 | 28 | 64.390 |
| 29 | 62.519 | 30 | 66.512 | 31 | 64.687 | 32 | 65.940 |
| 33 | 66.799 | 34 | 67.969 | 35 | 69.221 | 36 | 68.772 |
| 37 | 68.102 | 38 | 65.707 | 39 | 68.719 | 40 | 67.793 |
| 41 | 63.366 | 42 | 68.292 | 43 | 65.303 | 44 | 63.152 |
| 45 | 64.889 | 46 | 64.800 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.257

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.665 | 2 | 30.593 | 3 | 30.131 | 4 | 17.830 |
| 5 | 32.272 | 6 | 29.871 | 7 | 18.757 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.717

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.614544E-02

DRY PRESSURE - 26.55768

FLOWS - 0 0

TOTAL FLOW 0

10.

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15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

101.

102.

103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200.

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202.

203.

204.

205.



SENSOR LIST

RECORD NUMBER - 85

DATE - 012

TIME - 4:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.63100 | 2 - | 26.62900 |
| 3 - | 26.63000 | 4 - | 26.63300 |
| 5 - | 26.64800 | 6 - | 26.63700 |

AVG PRESSURE 26.63210

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.871 | 2 | 66.012 | 3 | 66.441 | 4 | 66.502 |
| 5 | 67.006 | 6 | 66.670 | 7 | 65.998 | 8 | 65.961 |
| 9 | 65.806 | 10 | 65.223 | 11 | 66.513 | 12 | 66.684 |
| 13 | 74.359 | 14 | 65.233 | 15 | 17.871 | 16 | 18.270 |
| 17 | 17.533 | 18 | 18.278 | 19 | 17.506 | 20 | 16.696 |
| 21 | 17.522 | 22 | 73.378 | 23 | 70.830 | 24 | 70.836 |
| 25 | 71.299 | 26 | 71.319 | 27 | 64.047 | 28 | 64.363 |
| 29 | 62.546 | 30 | 66.496 | 31 | 64.617 | 32 | 65.881 |
| 33 | 66.794 | 34 | 67.976 | 35 | 69.207 | 36 | 68.801 |
| 37 | 68.260 | 38 | 65.714 | 39 | 68.714 | 40 | 67.789 |
| 41 | 63.377 | 42 | 68.269 | 43 | 65.272 | 44 | 63.152 |
| 45 | 64.880 | 46 | 64.811 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.229

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.665 | 2 | 30.394 | 3 | 30.025 | 4 | 11.876 |
| 5 | 32.067 | 6 | 29.970 | 7 | 18.757 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.437

AMBIENT PRESS - 14.461

VAPOR PRESS - .0751614

DRY PRESSURE - 26.55694

FLOWS - 0 0

TOTAL FLOW 0

100-100000

100-100000

100-100000

100-100000

100-100000

SENSOR LIST

RECORD NUMBER - 86

DATE - 012

TIME - 4:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.63000 | 2 - | 26.62800 |
| 3 - | 26.62900 | 4 - | 26.63200 |
| 5 - | 26.64700 | 6 - | 26.63600 |

AVG PRESSURE 26.63110

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 66.828 | 2 | 65.969 | 3 | 66.430 | 4 | 66.437 |
| 5 | 66.963 | 6 | 66.650 | 7 | 65.933 | 8 | 65.940 |
| 9 | 65.775 | 10 | 65.234 | 11 | 66.481 | 12 | 66.610 |
| 13 | 74.368 | 14 | 65.202 | 15 | 17.924 | 16 | 18.464 |
| 17 | 17.521 | 18 | 18.001 | 19 | 17.506 | 20 | 16.727 |
| 21 | 17.515 | 22 | 73.371 | 23 | 70.815 | 24 | 70.850 |
| 25 | 71.324 | 26 | 71.335 | 27 | 64.042 | 28 | 64.368 |
| 29 | 62.530 | 30 | 66.501 | 31 | 64.675 | 32 | 65.908 |
| 33 | 66.767 | 34 | 67.958 | 35 | 69.221 | 36 | 68.795 |
| 37 | 68.156 | 38 | 65.719 | 39 | 68.687 | 40 | 67.782 |
| 41 | 63.354 | 42 | 68.258 | 43 | 65.292 | 44 | 63.152 |
| 45 | 64.869 | 46 | 64.811 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 60.207

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.566 | 2 | 30.401 | 3 | 29.926 | 4 | 13.291 |
| 5 | 32.066 | 6 | 29.970 | 7 | 18.896 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.458

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.523513E-02

DRY PRESSURE - 26.55586

FLOWS - 0 0

TOTAL FLOW 0

2

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SENSOR LIST

RECORD NUMBER - 87

DATE - 012

TIME - 4:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.62900 | 2 - | 26.62600 |
| 3 - | 26.62800 | 4 - | 26.63000 |
| 5 - | 26.64500 | 6 - | 26.63400 |

AVG PRESSURE 26.62953

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.752 | 2 | 65.935 | 3 | 66.376 | 4 | 66.382 |
| 5 | 66.951 | 6 | 66.542 | 7 | 65.921 | 8 | 65.961 |
| 9 | 65.752 | 10 | 65.157 | 11 | 66.404 | 12 | 66.556 |
| 13 | 74.456 | 14 | 65.159 | 15 | 17.947 | 16 | 18.676 |
| 17 | 17.586 | 18 | 17.829 | 19 | 17.526 | 20 | 16.685 |
| 21 | 17.564 | 22 | 73.378 | 23 | 70.916 | 24 | 70.879 |
| 25 | 71.331 | 26 | 71.351 | 27 | 64.027 | 28 | 64.352 |
| 29 | 62.526 | 30 | 66.485 | 31 | 64.594 | 32 | 65.913 |
| 33 | 66.774 | 34 | 67.953 | 35 | 69.207 | 36 | 68.768 |
| 37 | 68.228 | 38 | 65.692 | 39 | 68.705 | 40 | 67.820 |
| 41 | 63.343 | 42 | 68.237 | 43 | 65.281 | 44 | 63.152 |
| 45 | 64.857 | 46 | 64.800 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.189

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.469 | 2 | 30.178 | 3 | 29.923 | 4 | 16.849 |
| 5 | 32.070 | 6 | 29.768 | 7 | 18.943 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.521

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.545596E-02

DRY PRESSURE - 26.55408

FLOWS - 0 0

TOTAL FLOW 0

10

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SENSOR LIST

RECORD NUMBER - 88

DATE - 012

TIME - 5: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.62700 | 2 - | 26.62500 |
| 3 - | 26.62600 | 4 - | 26.62900 |
| 5 - | 26.64400 | 6 - | 26.63300 |

AVG PRESSURE 26.62810

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 66.736 | 2 | 65.838 | 3 | 66.342 | 4 | 66.362 |
| 5 | 66.902 | 6 | 66.519 | 7 | 65.867 | 8 | 65.918 |
| 9 | 65.682 | 10 | 65.135 | 11 | 66.350 | 12 | 66.501 |
| 13 | 74.487 | 14 | 65.094 | 15 | 18.235 | 16 | 18.442 |
| 17 | 17.702 | 18 | 17.787 | 19 | 17.526 | 20 | 16.738 |
| 21 | 17.558 | 22 | 73.394 | 23 | 70.889 | 24 | 70.873 |
| 25 | 71.390 | 26 | 71.355 | 27 | 64.031 | 28 | 64.325 |
| 29 | 62.476 | 30 | 66.469 | 31 | 64.739 | 32 | 65.951 |
| 33 | 66.810 | 34 | 67.989 | 35 | 69.212 | 36 | 68.741 |
| 37 | 68.244 | 38 | 65.696 | 39 | 68.656 | 40 | 67.750 |
| 41 | 63.327 | 42 | 68.188 | 43 | 65.308 | 44 | 63.134 |
| 45 | 64.862 | 46 | 64.805 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 60.169

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.466 | 2 | 30.182 | 3 | 29.927 | 4 | 14.699 |
| 5 | 31.865 | 6 | 29.757 | 7 | 18.894 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.420

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.510344E-02

DRY PRESSURE - 26.553

FLOWS - 0 0

TOTAL FLOW 0

11

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SENSOR LIST

RECORD NUMBER - 89

DATE - 012

TIME - 5:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.62700 | 2 - | 26.62400 |
| 3 - | 26.62500 | 4 - | 26.62800 |
| 5 - | 26.64300 | 6 - | 26.63200 |

AVG PRESSURE 26.62740

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.693 | 2 | 65.838 | 3 | 66.257 | 4 | 66.308 |
| 5 | 66.836 | 6 | 66.530 | 7 | 65.815 | 8 | 65.918 |
| 9 | 65.628 | 10 | 65.072 | 11 | 66.362 | 12 | 66.459 |
| 13 | 74.487 | 14 | 65.105 | 15 | 18.128 | 16 | 18.196 |
| 17 | 17.479 | 18 | 17.670 | 19 | 17.538 | 20 | 16.770 |
| 21 | 17.542 | 22 | 73.401 | 23 | 70.896 | 24 | 70.888 |
| 25 | 71.385 | 26 | 71.362 | 27 | 64.015 | 28 | 64.298 |
| 29 | 62.481 | 30 | 66.453 | 31 | 64.606 | 32 | 66.075 |
| 33 | 66.751 | 34 | 67.953 | 35 | 69.196 | 36 | 68.756 |
| 37 | 68.185 | 38 | 65.671 | 39 | 68.628 | 40 | 67.746 |
| 41 | 63.305 | 42 | 68.154 | 43 | 65.242 | 44 | 63.114 |
| 45 | 64.839 | 46 | 64.796 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.143

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.368 | 2 | 30.194 | 3 | 29.719 | 4 | 22.616 |
| 5 | 31.968 | 6 | 29.558 | 7 | 18.896 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.612

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.577568E-02

DRY PRESSURE - 26.55162

FLOWS - 0 0

TOTAL FLOW 0

2

3

4

5

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SENSOR LIST

RECORD NUMBER - 90

DATE - 012

TIME - 5:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.62600 | 2 - | 26.62300 |
| 3 - | 26.62400 | 4 - | 26.62700 |
| 5 - | 26.64200 | 6 - | 26.63100 |

AVG PRESSURE 26.62640

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.643 | 2 | 65.796 | 3 | 66.203 | 4 | 66.254 |
| 5 | 66.821 | 6 | 66.411 | 7 | 65.782 | 8 | 65.864 |
| 9 | 65.601 | 10 | 65.029 | 11 | 66.308 | 12 | 66.416 |
| 13 | 74.530 | 14 | 65.073 | 15 | 18.074 | 16 | 18.077 |
| 17 | 17.318 | 18 | 17.606 | 19 | 17.560 | 20 | 16.792 |
| 21 | 17.576 | 22 | 73.444 | 23 | 70.959 | 24 | 70.922 |
| 25 | 71.396 | 26 | 71.373 | 27 | 64.027 | 28 | 64.298 |
| 29 | 62.481 | 30 | 66.453 | 31 | 64.585 | 32 | 65.924 |
| 33 | 66.708 | 34 | 67.965 | 35 | 69.196 | 36 | 68.779 |
| 37 | 68.239 | 38 | 65.660 | 39 | 68.640 | 40 | 67.766 |
| 41 | 63.300 | 42 | 68.150 | 43 | 65.249 | 44 | 63.118 |
| 45 | 64.835 | 46 | 64.800 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.117

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.273 | 2 | 30.092 | 3 | 29.625 | 4 | 13.052 |
| 5 | 31.864 | 6 | 29.653 | 7 | 18.847 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.185

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.428754E-02

DRY PRESSURE - 26.55211

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 91

DATE - 012

TIME - 5:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.62300 | 2 - | 26.62100 |
| 3 - | 26.62200 | 4 - | 26.62500 |
| 5 - | 26.64000 | 6 - | 26.62900 |

AVG PRESSURE 26.62410

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.623 | 2 | 65.818 | 3 | 66.191 | 4 | 66.157 |
| 5 | 66.789 | 6 | 66.303 | 7 | 65.770 | 8 | 65.789 |
| 9 | 65.558 | 10 | 64.952 | 11 | 66.330 | 12 | 66.382 |
| 13 | 74.510 | 14 | 64.974 | 15 | 18.021 | 16 | 18.249 |
| 17 | 17.191 | 18 | 17.574 | 19 | 17.549 | 20 | 16.812 |
| 21 | 17.618 | 22 | 73.444 | 23 | 70.939 | 24 | 70.911 |
| 25 | 71.439 | 26 | 71.373 | 27 | 64.015 | 28 | 64.266 |
| 29 | 62.472 | 30 | 66.431 | 31 | 64.520 | 32 | 65.913 |
| 33 | 66.697 | 34 | 67.942 | 35 | 69.196 | 36 | 68.747 |
| 37 | 68.194 | 38 | 65.671 | 39 | 68.608 | 40 | 67.735 |
| 41 | 63.289 | 42 | 68.150 | 43 | 65.238 | 44 | 63.118 |
| 45 | 64.826 | 46 | 64.800 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.089

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.164 | 2 | 29.975 | 3 | 29.520 | 4 | 13.102 |
| 5 | 31.658 | 6 | 29.665 | 7 | 18.847 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.116

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.404891E-02

DRY PRESSURE - 26.55005

FLOWS - 0 0

TOTAL FLOW 0

10

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SENSOR LIST

RECORD NUMBER - 92

DATE - 012

TIME - 6: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.62300 | 2 - | 26.62100 |
| 3 - | 26.62200 | 4 - | 26.62400 |
| 5 - | 26.63900 | 6 - | 26.62800 |

AVG PRESSURE 26.62383

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.547 | 2 | 65.730 | 3 | 66.171 | 4 | 66.146 |
| 5 | 66.746 | 6 | 66.348 | 7 | 65.685 | 8 | 65.767 |
| 9 | 65.493 | 10 | 64.932 | 11 | 66.233 | 12 | 66.350 |
| 13 | 74.499 | 14 | 64.985 | 15 | 18.000 | 16 | 18.518 |
| 17 | 17.199 | 18 | 17.552 | 19 | 17.560 | 20 | 16.792 |
| 21 | 17.900 | 22 | 73.459 | 23 | 70.986 | 24 | 70.938 |
| 25 | 71.444 | 26 | 71.387 | 27 | 64.042 | 28 | 64.303 |
| 29 | 62.454 | 30 | 66.435 | 31 | 64.610 | 32 | 65.908 |
| 33 | 66.659 | 34 | 67.935 | 35 | 69.146 | 36 | 68.772 |
| 37 | 68.199 | 38 | 65.696 | 39 | 68.613 | 40 | 67.728 |
| 41 | 63.289 | 42 | 68.138 | 43 | 65.238 | 44 | 63.130 |
| 45 | 64.826 | 46 | 64.800 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.079

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.273 | 2 | 29.983 | 3 | 29.516 | 4 | 12.912 |
| 5 | 31.761 | 6 | 29.665 | 7 | 18.894 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.134

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.411317E-02

DRY PRESSURE - 26.54972

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 93

DATE - 012

TIME - 6:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.62200 | 2 - | 26.62000 |
| 3 - | 26.62100 | 4 - | 26.62300 |
| 5 - | 26.63800 | 6 - | 26.62700 |

AVG PRESSURE 26.62283

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 66.569 | 2 | 65.721 | 3 | 66.074 | 4 | 66.134 |
| 5 | 66.712 | 6 | 66.325 | 7 | 65.685 | 8 | 65.670 |
| 9 | 65.471 | 10 | 64.932 | 11 | 66.211 | 12 | 66.308 |
| 13 | 74.510 | 14 | 64.965 | 15 | 17.947 | 16 | 18.806 |
| 17 | 17.191 | 18 | 17.509 | 19 | 17.569 | 20 | 16.781 |
| 21 | 17.985 | 22 | 73.502 | 23 | 70.963 | 24 | 70.958 |
| 25 | 71.498 | 26 | 71.387 | 27 | 63.988 | 28 | 64.271 |
| 29 | 62.476 | 30 | 66.435 | 31 | 64.610 | 32 | 66.005 |
| 33 | 66.648 | 34 | 67.935 | 35 | 69.178 | 36 | 68.741 |
| 37 | 68.039 | 38 | 65.631 | 39 | 68.601 | 40 | 67.707 |
| 41 | 63.280 | 42 | 68.129 | 43 | 65.227 | 44 | 63.130 |
| 45 | 64.815 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 60.064

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 30.164 | 2 | 29.873 | 3 | 29.422 | 4 | 17.694 |
| 5 | 31.761 | 6 | 29.665 | 7 | 18.943 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.270

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.458062E-02

DRY PRESSURE - 26.54825

FLOWS - 0 0

TOTAL FLOW 0

24

25

26

27

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SENSOR LIST

RECORD NUMBER - 94

DATE - 012

TIME - 6:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.61900 | 2 - | 26.61700 |
| 3 - | 26.61800 | 4 - | 26.62100 |
| 5 - | 26.63500 | 6 - | 26.62400 |

AVG PRESSURE 26.61996

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.483 | 2 | 65.688 | 3 | 66.074 | 4 | 66.080 |
| 5 | 66.681 | 6 | 66.294 | 7 | 65.642 | 8 | 65.638 |
| 9 | 65.396 | 10 | 64.867 | 11 | 66.179 | 12 | 66.242 |
| 13 | 74.433 | 14 | 64.911 | 15 | 17.763 | 16 | 18.902 |
| 17 | 17.790 | 18 | 17.690 | 19 | 17.549 | 20 | 16.770 |
| 21 | 18.002 | 22 | 73.498 | 23 | 70.970 | 24 | 70.954 |
| 25 | 71.536 | 26 | 71.393 | 27 | 63.993 | 28 | 64.224 |
| 29 | 62.429 | 30 | 66.419 | 31 | 64.585 | 32 | 66.010 |
| 33 | 66.654 | 34 | 67.942 | 35 | 69.153 | 36 | 68.725 |
| 37 | 68.077 | 38 | 65.638 | 39 | 68.586 | 40 | 67.735 |
| 41 | 63.280 | 42 | 68.118 | 43 | 65.218 | 44 | 63.130 |
| 45 | 64.815 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.045

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|-------|
| 1 | 29.961 | 2 | 29.885 | 3 | 29.415 | 4 | 8.479 |
| 5 | 31.758 | 6 | 29.356 | 7 | 18.847 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.790

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.293628E-02

DRY PRESSURE - 26.54703

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 95

DATE - 012

TIME - 6:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.61900 | 2 - | 26.61600 |
| 3 - | 26.61700 | 4 - | 26.62000 |
| 5 - | 26.63400 | 6 - | 26.62300 |

AVG PRESSURE 26.61926

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.483 | 2 | 65.645 | 3 | 66.051 | 4 | 65.974 |
| 5 | 66.638 | 6 | 66.271 | 7 | 65.610 | 8 | 65.604 |
| 9 | 65.353 | 10 | 64.824 | 11 | 66.134 | 12 | 66.222 |
| 13 | 74.456 | 14 | 64.835 | 15 | 17.755 | 16 | 18.719 |
| 17 | 17.778 | 18 | 17.713 | 19 | 17.569 | 20 | 16.823 |
| 21 | 18.014 | 22 | 73.541 | 23 | 70.959 | 24 | 70.985 |
| 25 | 71.525 | 26 | 71.405 | 27 | 63.941 | 28 | 64.201 |
| 29 | 62.481 | 30 | 66.410 | 31 | 64.497 | 32 | 66.010 |
| 33 | 66.591 | 34 | 67.910 | 35 | 69.173 | 36 | 68.725 |
| 37 | 68.109 | 38 | 65.617 | 39 | 68.574 | 40 | 67.723 |
| 41 | 63.269 | 42 | 68.129 | 43 | 65.206 | 44 | 63.118 |
| 45 | 64.803 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 60.023

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.965 | 2 | 29.772 | 3 | 29.422 | 4 | 21.092 |
| 5 | 31.453 | 6 | 29.455 | 7 | 18.847 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 28.293

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.466326E-02

DRY PRESSURE - 26.5446

FLOWS - 0 0

TOTAL FLOW 0

[illegible]

2015

14

SENSOR LIST

RECORD NUMBER - 96

DATE - 012

TIME - 7: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.61800 | 2 - | 26.61600 |
| 3 - | 26.61700 | 4 - | 26.61900 |
| 5 - | 26.63300 | 6 - | 26.62200 |

AVG PRESSURE 26.61870

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 66.418 | 2 | 65.591 | 3 | 65.986 | 4 | 65.983 |
| 5 | 66.616 | 6 | 66.143 | 7 | 65.599 | 8 | 65.562 |
| 9 | 65.362 | 10 | 64.790 | 11 | 66.103 | 12 | 66.145 |
| 13 | 74.510 | 14 | 64.857 | 15 | 17.755 | 16 | 18.580 |
| 17 | 17.747 | 18 | 17.798 | 19 | 17.580 | 20 | 16.823 |
| 21 | 17.884 | 22 | 73.541 | 23 | 70.959 | 24 | 71.008 |
| 25 | 71.536 | 26 | 71.416 | 27 | 63.941 | 28 | 64.224 |
| 29 | 62.450 | 30 | 66.410 | 31 | 64.540 | 32 | 65.958 |
| 33 | 66.569 | 34 | 67.931 | 35 | 69.173 | 36 | 68.747 |
| 37 | 68.163 | 38 | 65.626 | 39 | 68.574 | 40 | 67.735 |
| 41 | 63.258 | 42 | 68.118 | 43 | 65.206 | 44 | 63.118 |
| 45 | 64.803 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 60.001

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.961 | 2 | 29.569 | 3 | 29.316 | 4 | 12.114 |
| 5 | 31.354 | 6 | 29.433 | 7 | 18.894 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.874

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.322107E-02

DRY PRESSURE - 26.54548

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 97

DATE - 012

TIME - 7:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.61500 | 2 - | 26.61200 |
| 3 - | 26.61400 | 4 - | 26.61600 |
| 5 - | 26.63000 | 6 - | 26.62000 |

AVG PRESSURE 26.61546

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 66.395 | 2 | 65.591 | 3 | 65.955 | 4 | 65.963 |
| 5 | 66.530 | 6 | 66.088 | 7 | 65.545 | 8 | 65.519 |
| 9 | 65.299 | 10 | 64.727 | 11 | 66.048 | 12 | 66.145 |
| 13 | 74.444 | 14 | 64.803 | 15 | 17.828 | 16 | 18.323 |
| 17 | 17.553 | 18 | 18.546 | 19 | 17.569 | 20 | 16.845 |
| 21 | 18.083 | 22 | 73.568 | 23 | 70.957 | 24 | 71.015 |
| 25 | 71.543 | 26 | 71.454 | 27 | 63.968 | 28 | 64.197 |
| 29 | 62.434 | 30 | 66.406 | 31 | 64.601 | 32 | 65.962 |
| 33 | 66.596 | 34 | 67.928 | 35 | 69.169 | 36 | 68.774 |
| 37 | 68.084 | 38 | 65.633 | 39 | 68.570 | 40 | 67.710 |
| 41 | 63.258 | 42 | 68.095 | 43 | 65.195 | 44 | 63.109 |
| 45 | 64.792 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 59.985

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.762 | 2 | 29.569 | 3 | 29.312 | 4 | 16.105 |
| 5 | 31.353 | 6 | 29.352 | 7 | 18.804 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.973

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.355933E-02

DRY PRESSURE - 26.5419

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 98

DATE - 012

TIME - 7:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.61400 | 2 - | 26.61200 |
| 3 - | 26.61300 | 4 - | 26.61500 |
| 5 - | 26.62900 | 6 - | 26.61900 |

AVG PRESSURE 26.61476

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.353 | 2 | 65.559 | 3 | 65.900 | 4 | 65.747 |
| 5 | 66.519 | 6 | 66.109 | 7 | 65.511 | 8 | 65.530 |
| 9 | 65.234 | 10 | 64.673 | 11 | 65.963 | 12 | 66.080 |
| 13 | 74.359 | 14 | 64.760 | 15 | 17.763 | 16 | 18.089 |
| 17 | 17.510 | 18 | 18.526 | 19 | 17.580 | 20 | 16.845 |
| 21 | 17.725 | 22 | 73.541 | 23 | 71.013 | 24 | 71.040 |
| 25 | 71.590 | 26 | 71.447 | 27 | 63.941 | 28 | 64.181 |
| 29 | 62.418 | 30 | 66.399 | 31 | 64.509 | 32 | 65.913 |
| 33 | 66.537 | 34 | 67.899 | 35 | 69.142 | 36 | 68.736 |
| 37 | 68.097 | 38 | 65.626 | 39 | 68.543 | 40 | 67.703 |
| 41 | 63.237 | 42 | 68.086 | 43 | 65.184 | 44 | 63.098 |
| 45 | 64.792 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.940

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.762 | 2 | 29.471 | 3 | 29.219 | 4 | 14.327 |
| 5 | 31.556 | 6 | 29.254 | 7 | 18.802 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.848

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.313366E-02

DRY PRESSURE - 26.54163

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 99

DATE - 012

TIME - 7:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.61300 | 2 - | 26.61100 |
| 3 - | 26.61200 | 4 - | 26.61400 |
| 5 - | 26.62800 | 6 - | 26.61800 |

AVG PRESSURE 26.61376

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.310 | 2 | 65.471 | 3 | 65.900 | 4 | 65.832 |
| 5 | 66.453 | 6 | 66.034 | 7 | 65.426 | 8 | 65.444 |
| 9 | 65.257 | 10 | 64.673 | 11 | 65.974 | 12 | 66.048 |
| 13 | 74.413 | 14 | 64.726 | 15 | 17.701 | 16 | 17.908 |
| 17 | 17.521 | 18 | 18.515 | 19 | 17.580 | 20 | 16.823 |
| 21 | 17.660 | 22 | 73.572 | 23 | 71.004 | 24 | 71.051 |
| 25 | 71.622 | 26 | 71.459 | 27 | 63.993 | 28 | 64.181 |
| 29 | 62.481 | 30 | 66.399 | 31 | 64.520 | 32 | 65.989 |
| 33 | 66.546 | 34 | 67.931 | 35 | 69.142 | 36 | 68.736 |
| 37 | 68.034 | 38 | 65.595 | 39 | 68.511 | 40 | 67.692 |
| 41 | 63.226 | 42 | 68.075 | 43 | 65.195 | 44 | 63.098 |
| 45 | 64.781 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.915

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.667 | 2 | 29.385 | 3 | 29.011 | 4 | 14.088 |
| 5 | 31.453 | 6 | 29.257 | 7 | 18.804 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.741

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.276941E-02

DRY PRESSURE - 26.54099

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 100

DATE - 012

TIME - 8: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.61100 | 2 - | 26.60800 |
| 3 - | 26.61000 | 4 - | 26.61200 |
| 5 - | 26.62600 | 6 - | 26.61500 |

AVG PRESSURE 26.61139

RTD/S

| | | | |
|-------------|-------------|-------------|-------------|
| 1 66.287 | 2 65.471 | 3 65.869 | 4 65.832 |
| 5 66.433 | 6 66.034 | 7 65.459 | 8 65.357 |
| 9 65.180 | 10 64.628 | 11 65.909 | 12 66.017 |
| 13 74.413 | 14 64.717 | 15 17.594 | 16 17.993 |
| 17 17.318 | 18 18.140 | 19 17.580 | 20 16.812 |
| 21 17.842 | 22 73.595 | 23 71.036 | 24 71.062 |
| 25 71.633 | 26 71.470 | 27 63.941 | 28 64.138 |
| 29 62.384 | 30 66.377 | 31 64.531 | 32 66.021 |
| 33 66.546 | 34 67.942 | 35 69.119 | 36 68.713 |
| 37 68.000 | 38 65.626 | 39 68.511 | 40 67.692 |
| 41 63.215 | 42 68.095 | 43 65.152 | 44 63.109 |
| 45 64.772 | 46 64.791 | INACT 0.000 | INACT 0.000 |
| INACT 0.000 | INACT 0.000 | | |

AVG RTD 59.901

DEW CELLS

| | | | |
|-------------|-------------|-------------|-------------|
| 1 29.667 | 2 29.493 | 3 29.113 | 4 13.288 |
| 5 31.353 | 6 29.257 | 7 18.894 | INACT 0.000 |
| INACT 0.000 | INACT 0.000 | INACT 0.000 | INACT 0.000 |
| INACT 0.000 | INACT 0.000 | INACT 0.000 | |

AVG DEW CELL 27.758

AMBIENT PRESS - 14.461

VAPOR PRESS - .0728281

DRY PRESSURE - 26.53857

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 101

DATE - 012

TIME - 8:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.61000 | 2 - | 26.60800 |
| 3 - | 26.60900 | 4 - | 26.61100 |
| 5 - | 26.62500 | 6 - | 26.61500 |

AVG PRESSURE 26.61076

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 66.233 | 2 | 65.408 | 3 | 65.804 | 4 | 65.801 |
| 5 | 66.410 | 6 | 65.946 | 7 | 65.383 | 8 | 65.399 |
| 9 | 65.137 | 10 | 64.608 | 11 | 65.877 | 12 | 66.005 |
| 13 | 74.390 | 14 | 64.672 | 15 | 17.658 | 16 | 18.120 |
| 17 | 17.253 | 18 | 17.829 | 19 | 17.591 | 20 | 16.866 |
| 21 | 18.034 | 22 | 73.615 | 23 | 71.036 | 24 | 71.094 |
| 25 | 71.665 | 26 | 71.479 | 27 | 63.950 | 28 | 64.116 |
| 29 | 62.461 | 30 | 66.377 | 31 | 64.594 | 32 | 65.904 |
| 33 | 66.526 | 34 | 67.910 | 35 | 69.131 | 36 | 68.682 |
| 37 | 67.840 | 38 | 65.606 | 39 | 68.489 | 40 | 67.680 |
| 41 | 63.203 | 42 | 68.064 | 43 | 65.195 | 44 | 63.109 |
| 45 | 64.772 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 59.877

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.562 | 2 | 29.403 | 3 | 28.820 | 4 | 16.241 |
| 5 | 31.152 | 6 | 29.154 | 7 | 18.992 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.729

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.272938E-02

DRY PRESSURE - 26.53803

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 102

DATE - 012

TIME - 8:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.60900 | 2 - | 26.60700 |
| 3 - | 26.60800 | 4 - | 26.61000 |
| 5 - | 26.62400 | 6 - | 26.61400 |

AVG PRESSURE 26.60976

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.202 | 2 | 65.408 | 3 | 65.783 | 4 | 65.735 |
| 5 | 66.379 | 6 | 65.937 | 7 | 65.360 | 8 | 65.390 |
| 9 | 65.103 | 10 | 64.565 | 11 | 65.855 | 12 | 65.951 |
| 13 | 74.368 | 14 | 64.672 | 15 | 17.701 | 16 | 18.292 |
| 17 | 17.298 | 18 | 17.594 | 19 | 17.591 | 20 | 16.854 |
| 21 | 18.119 | 22 | 73.626 | 23 | 71.056 | 24 | 71.094 |
| 25 | 71.633 | 26 | 71.479 | 27 | 63.907 | 28 | 64.138 |
| 29 | 62.396 | 30 | 66.356 | 31 | 64.531 | 32 | 65.958 |
| 33 | 66.472 | 34 | 67.888 | 35 | 69.142 | 36 | 68.725 |
| 37 | 68.066 | 38 | 65.617 | 39 | 68.477 | 40 | 67.692 |
| 41 | 63.192 | 42 | 68.064 | 43 | 65.163 | 44 | 63.098 |
| 45 | 64.760 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.872

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.566 | 2 | 29.295 | 3 | 28.921 | 4 | 13.757 |
| 5 | 31.148 | 6 | 29.052 | 7 | 19.033 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.635

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.241178E-02

DRY PRESSURE - 26.53735

FLOWS - 0 0

TOTAL FLOW 0

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

SENSOR LIST

RECORD NUMBER - 103

DATE - 012

TIME - 8:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.60700 | 2 - | 26.60500 |
| 3 - | 26.60600 | 4 - | 26.60800 |
| 5 - | 26.62200 | 6 - | 26.61200 |

AVG PRESSURE 26.60776

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.168 | 2 | 65.354 | 3 | 65.738 | 4 | 65.693 |
| 5 | 66.356 | 6 | 65.915 | 7 | 65.340 | 8 | 65.336 |
| 9 | 65.040 | 10 | 64.522 | 11 | 65.812 | 12 | 65.929 |
| 13 | 74.379 | 14 | 64.641 | 15 | 17.947 | 16 | 18.216 |
| 17 | 17.479 | 18 | 17.541 | 19 | 17.591 | 20 | 16.866 |
| 21 | 18.056 | 22 | 73.649 | 23 | 71.110 | 24 | 71.116 |
| 25 | 71.708 | 26 | 71.490 | 27 | 63.941 | 28 | 64.104 |
| 29 | 62.364 | 30 | 66.356 | 31 | 64.509 | 32 | 65.947 |
| 33 | 66.483 | 34 | 67.868 | 35 | 69.076 | 36 | 68.768 |
| 37 | 68.023 | 38 | 65.563 | 39 | 68.477 | 40 | 67.660 |
| 41 | 63.183 | 42 | 68.053 | 43 | 65.152 | 44 | 63.098 |
| 45 | 64.760 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.851

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.461 | 2 | 29.200 | 3 | 28.925 | 4 | 16.388 |
| 5 | 31.049 | 6 | 28.952 | 7 | 18.847 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.671

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.253142E-02

DRY PRESSURE - 26.53523

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 104

DATE - 012

TIME - 9: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.60700 | 2 - | 26.60400 |
| 3 - | 26.60600 | 4 - | 26.60800 |
| 5 - | 26.62200 | 6 - | 26.61100 |

AVG PRESSURE 26.60740

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 66.136 | 2 | 65.343 | 3 | 65.761 | 4 | 65.681 |
| 5 | 66.271 | 6 | 65.895 | 7 | 65.308 | 8 | 65.282 |
| 9 | 65.072 | 10 | 64.488 | 11 | 65.801 | 12 | 65.920 |
| 13 | 74.368 | 14 | 64.555 | 15 | 17.936 | 16 | 17.950 |
| 17 | 17.244 | 18 | 17.402 | 19 | 17.591 | 20 | 16.877 |
| 21 | 18.065 | 22 | 73.680 | 23 | 71.090 | 24 | 71.137 |
| 25 | 71.676 | 26 | 71.513 | 27 | 63.950 | 28 | 64.104 |
| 29 | 62.438 | 30 | 66.356 | 31 | 64.509 | 32 | 65.967 |
| 33 | 66.460 | 34 | 67.910 | 35 | 69.131 | 36 | 68.736 |
| 37 | 67.937 | 38 | 65.595 | 39 | 68.477 | 40 | 67.660 |
| 41 | 63.183 | 42 | 68.032 | 43 | 65.141 | 44 | 63.098 |
| 45 | 64.760 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 59.829

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.465 | 2 | 29.178 | 3 | 29.012 | 4 | 13.097 |
| 5 | 31.251 | 6 | 28.952 | 7 | 18.846 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.576

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.221254E-02

DRY PRESSURE - 26.53518

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 105

DATE - 012

TIME - 9:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.60600 | 2 - | 26.60400 |
| 3 - | 26.60500 | 4 - | 26.60700 |
| 5 - | 26.62100 | 6 - | 26.61100 |

AVG PRESSURE 26.60676

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.114 | 2 | 65.320 | 3 | 65.675 | 4 | 65.607 |
| 5 | 66.248 | 6 | 65.850 | 7 | 65.243 | 8 | 65.293 |
| 9 | 65.040 | 10 | 64.477 | 11 | 65.747 | 12 | 65.866 |
| 13 | 74.359 | 14 | 64.544 | 15 | 17.851 | 16 | 17.800 |
| 17 | 17.050 | 18 | 17.306 | 19 | 17.569 | 20 | 16.888 |
| 21 | 18.195 | 22 | 73.680 | 23 | 71.133 | 24 | 71.148 |
| 25 | 71.742 | 26 | 71.533 | 27 | 63.941 | 28 | 64.095 |
| 29 | 62.429 | 30 | 66.356 | 31 | 64.531 | 32 | 66.001 |
| 33 | 66.397 | 34 | 67.899 | 35 | 69.119 | 36 | 68.736 |
| 37 | 67.872 | 38 | 65.563 | 39 | 68.489 | 40 | 67.660 |
| 41 | 63.172 | 42 | 67.999 | 43 | 65.130 | 44 | 63.087 |
| 45 | 64.749 | 46 | 64.780 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.805

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.363 | 2 | 29.181 | 3 | 28.824 | 4 | 13.944 |
| 5 | 31.148 | 6 | 28.941 | 7 | 18.847 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.523

AMBIENT PRESS - 14.461

VAPOR PRESS - .0720355

DRY PRESSURE - 26.53473

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 106

DATE - 012

TIME - 9:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.60400 | 2 - | 26.60100 |
| 3 - | 26.60300 | 4 - | 26.60500 |
| 5 - | 26.61800 | 6 - | 26.60900 |

AVG PRESSURE 26.60439

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.028 | 2 | 65.246 | 3 | 65.610 | 4 | 65.596 |
| 5 | 66.248 | 6 | 65.710 | 7 | 65.232 | 8 | 65.194 |
| 9 | 64.898 | 10 | 64.434 | 11 | 65.715 | 12 | 65.800 |
| 13 | 74.325 | 14 | 64.544 | 15 | 17.786 | 16 | 17.854 |
| 17 | 16.900 | 18 | 17.264 | 19 | 17.580 | 20 | 16.866 |
| 21 | 18.407 | 22 | 73.703 | 23 | 71.090 | 24 | 71.170 |
| 25 | 71.785 | 26 | 71.544 | 27 | 63.907 | 28 | 64.073 |
| 29 | 62.429 | 30 | 66.334 | 31 | 64.412 | 32 | 65.892 |
| 33 | 66.397 | 34 | 67.868 | 35 | 69.110 | 36 | 68.671 |
| 37 | 67.829 | 38 | 65.563 | 39 | 68.457 | 40 | 67.615 |
| 41 | 63.161 | 42 | 68.010 | 43 | 65.172 | 44 | 63.087 |
| 45 | 64.738 | 46 | 64.780 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.769

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.359 | 2 | 29.076 | 3 | 28.820 | 4 | 13.804 |
| 5 | 31.045 | 6 | 28.949 | 7 | 18.988 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.516

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.201099E-02

DRY PRESSURE - 26.53238

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 107

DATE - 012

TIME - 9:45:26

PRESSURES

| | | | | | |
|---|---|----------|---|---|----------|
| 1 | - | 26.60400 | 2 | - | 26.60100 |
| 3 | - | 26.60300 | 4 | - | 26.60500 |
| 5 | - | 26.61800 | 6 | - | 26.60800 |

AVG PRESSURE 26.60433

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 66.105 | 2 | 65.332 | 3 | 65.652 | 4 | 65.553 |
| 5 | 66.174 | 6 | 65.795 | 7 | 65.189 | 8 | 65.239 |
| 9 | 64.964 | 10 | 64.446 | 11 | 65.715 | 12 | 65.769 |
| 13 | 74.359 | 14 | 64.566 | 15 | 17.732 | 16 | 18.153 |
| 17 | 16.911 | 18 | 17.253 | 19 | 17.623 | 20 | 16.877 |
| 21 | 18.450 | 22 | 73.703 | 23 | 71.153 | 24 | 71.191 |
| 25 | 71.785 | 26 | 71.524 | 27 | 63.896 | 28 | 64.073 |
| 29 | 62.384 | 30 | 66.334 | 31 | 64.488 | 32 | 65.838 |
| 33 | 66.386 | 34 | 67.910 | 35 | 69.110 | 36 | 68.747 |
| 37 | 68.012 | 38 | 65.552 | 39 | 68.446 | 40 | 67.649 |
| 41 | 63.149 | 42 | 68.010 | 43 | 65.141 | 44 | 63.075 |
| 45 | 64.738 | 46 | 64.780 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 59.794

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.262 | 2 | 29.069 | 3 | 28.620 | 4 | 11.786 |
| 5 | 31.049 | 6 | 28.945 | 7 | 18.896 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.342

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.142983E-02

DRY PRESSURE - 26.5329

FLOWS - 0 0

TOTAL FLOW 0

[illegible]

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 三、
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343



SENSOR LIST

RECORD NUMBER - 108

DATE - 012

TIME - 10: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.60300 | 2 - | 26.60100 |
| 3 - | 26.60200 | 4 - | 26.60400 |
| 5 - | 26.61700 | 6 - | 26.60700 |

AVG PRESSURE 26.60363

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 66.028 | 2 | 65.223 | 3 | 65.567 | 4 | 65.530 |
| 5 | 66.151 | 6 | 65.744 | 7 | 65.157 | 8 | 65.109 |
| 9 | 64.909 | 10 | 64.392 | 11 | 65.638 | 12 | 65.735 |
| 13 | 74.401 | 14 | 64.458 | 15 | 17.732 | 16 | 18.442 |
| 17 | 16.911 | 18 | 17.210 | 19 | 17.614 | 20 | 16.823 |
| 21 | 18.322 | 22 | 73.755 | 23 | 71.153 | 24 | 71.202 |
| 25 | 71.816 | 26 | 71.533 | 27 | 63.896 | 28 | 64.073 |
| 29 | 62.418 | 30 | 66.334 | 31 | 64.466 | 32 | 65.861 |
| 33 | 66.321 | 34 | 67.868 | 35 | 69.110 | 36 | 68.704 |
| 37 | 68.000 | 38 | 65.552 | 39 | 68.435 | 40 | 67.606 |
| 41 | 63.149 | 42 | 67.987 | 43 | 65.130 | 44 | 63.087 |
| 45 | 64.738 | 46 | 64.780 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.752

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.164 | 2 | 28.982 | 3 | 28.519 | 4 | 13.615 |
| 5 | 30.946 | 6 | 28.849 | 7 | 18.941 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.335

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.140632E-02

DRY PRESSURE - 26.53222

FLOWS - 0 0

TOTAL FLOW 0

12

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5.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

1.

SENSOR LIST

RECORD NUMBER - 109

DATE - 012

TIME - 10:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.60100 | 2 - | 26.59800 |
| 3 - | 26.60000 | 4 - | 26.60200 |
| 5 - | 26.61500 | 6 - | 26.60500 |

AVG PRESSURE 26.60133

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.974 | 2 | 65.160 | 3 | 65.544 | 4 | 65.487 |
| 5 | 66.108 | 6 | 65.699 | 7 | 65.157 | 8 | 65.131 |
| 9 | 64.833 | 10 | 64.360 | 11 | 65.575 | 12 | 65.681 |
| 13 | 74.433 | 14 | 64.458 | 15 | 17.636 | 16 | 18.741 |
| 17 | 17.414 | 18 | 17.134 | 19 | 17.645 | 20 | 16.866 |
| 21 | 18.311 | 22 | 73.755 | 23 | 71.133 | 24 | 71.202 |
| 25 | 71.839 | 26 | 71.576 | 27 | 63.907 | 28 | 64.050 |
| 29 | 62.396 | 30 | 66.334 | 31 | 64.497 | 32 | 65.935 |
| 33 | 66.352 | 34 | 67.868 | 35 | 69.099 | 36 | 68.713 |
| 37 | 67.883 | 38 | 65.529 | 39 | 68.435 | 40 | 67.606 |
| 41 | 63.149 | 42 | 68.010 | 43 | 65.152 | 44 | 63.087 |
| 45 | 64.738 | 46 | 64.780 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.742

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.062 | 2 | 28.869 | 3 | 28.620 | 4 | 15.446 |
| 5 | 30.843 | 6 | 28.845 | 7 | 18.990 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.414

AMBIENT PRESS - 14.461

VAPOR PRESS - .0716683

DRY PRESSURE - 26.52966

FLOWS - 0 0

TOTAL FLOW 0

121

122

123

124

125

126

127

128



SENSOR LIST

RECORD NUMBER - 110

DATE - 012

TIME - 10:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.60100 | 2 - | 26.59800 |
| 3 - | 26.59900 | 4 - | 26.60100 |
| 5 - | 26.61500 | 6 - | 26.60500 |

AVG PRESSURE 26.60106

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.942 | 2 | 65.160 | 3 | 65.490 | 4 | 65.499 |
| 5 | 66.097 | 6 | 65.699 | 7 | 65.081 | 8 | 65.163 |
| 9 | 64.736 | 10 | 64.306 | 11 | 65.596 | 12 | 65.670 |
| 13 | 74.390 | 14 | 64.424 | 15 | 17.518 | 16 | 18.473 |
| 17 | 17.436 | 18 | 17.049 | 19 | 17.656 | 20 | 16.888 |
| 21 | 18.172 | 22 | 73.766 | 23 | 71.133 | 24 | 71.202 |
| 25 | 71.839 | 26 | 71.567 | 27 | 63.941 | 28 | 64.019 |
| 29 | 62.396 | 30 | 66.313 | 31 | 64.434 | 32 | 65.947 |
| 33 | 66.309 | 34 | 67.879 | 35 | 69.099 | 36 | 68.725 |
| 37 | 67.894 | 38 | 65.529 | 39 | 68.414 | 40 | 67.649 |
| 41 | 63.138 | 42 | 67.978 | 43 | 65.118 | 44 | 63.075 |
| 45 | 64.727 | 46 | 64.780 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.723

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.055 | 2 | 28.865 | 3 | 28.417 | 4 | 19.414 |
| 5 | 31.049 | 6 | 28.747 | 7 | 18.990 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.490

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.192274E-02

DRY PRESSURE - 26.52914

FLOWS - 0 0

TOTAL FLOW 0

20

200

2000

2000

2000

2000

2000

2000

2000

SENSOR LIST

RECORD NUMBER - 111

DATE - 012

TIME - 10:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.60000 | 2 - | 26.59800 |
| 3 - | 26.59900 | 4 - | 26.60100 |
| 5 - | 26.61400 | 6 - | 26.60400 |

AVG PRESSURE 26.60063

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.909 | 2 | 65.138 | 3 | 65.470 | 4 | 65.467 |
| 5 | 66.065 | 6 | 65.559 | 7 | 65.058 | 8 | 65.055 |
| 9 | 64.801 | 10 | 64.295 | 11 | 65.541 | 12 | 65.649 |
| 13 | 74.359 | 14 | 64.393 | 15 | 17.455 | 16 | 18.334 |
| 17 | 17.394 | 18 | 17.103 | 19 | 17.656 | 20 | 16.899 |
| 21 | 18.237 | 22 | 73.789 | 23 | 71.164 | 24 | 71.256 |
| 25 | 71.882 | 26 | 71.576 | 27 | 63.887 | 28 | 64.019 |
| 29 | 62.396 | 30 | 66.313 | 31 | 64.497 | 32 | 65.935 |
| 33 | 66.300 | 34 | 67.888 | 35 | 69.110 | 36 | 68.713 |
| 37 | 67.861 | 38 | 65.529 | 39 | 68.414 | 40 | 67.626 |
| 41 | 63.129 | 42 | 67.978 | 43 | 65.118 | 44 | 63.075 |
| 45 | 64.727 | 46 | 64.780 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.699

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.062 | 2 | 28.689 | 3 | 28.417 | 4 | 15.030 |
| 5 | 30.946 | 6 | 28.853 | 7 | 18.894 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.308

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.131602E-02

DRY PRESSURE - 26.52931

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 112

DATE - 012

TIME - 11: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.59600 | 2 - | 26.59400 |
| 3 - | 26.59600 | 4 - | 26.59800 |
| 5 - | 26.61100 | 6 - | 26.60100 |

AVG PRESSURE 26.59703

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.900 | 2 | 65.106 | 3 | 65.427 | 4 | 65.348 |
| 5 | 66.011 | 6 | 65.613 | 7 | 65.006 | 8 | 65.012 |
| 9 | 64.747 | 10 | 64.252 | 11 | 65.499 | 12 | 65.564 |
| 13 | 74.422 | 14 | 64.339 | 15 | 17.486 | 16 | 18.066 |
| 17 | 17.287 | 18 | 17.766 | 19 | 17.645 | 20 | 16.899 |
| 21 | 18.183 | 22 | 73.800 | 23 | 71.187 | 24 | 71.256 |
| 25 | 71.882 | 26 | 71.587 | 27 | 63.864 | 28 | 64.007 |
| 29 | 62.396 | 30 | 66.302 | 31 | 64.509 | 32 | 65.861 |
| 33 | 66.289 | 34 | 67.856 | 35 | 69.110 | 36 | 68.713 |
| 37 | 67.937 | 38 | 65.552 | 39 | 68.403 | 40 | 67.669 |
| 41 | 63.118 | 42 | 67.967 | 43 | 65.130 | 44 | 63.075 |
| 45 | 64.718 | 46 | 64.780 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.680

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 29.055 | 2 | 28.847 | 3 | 28.515 | 4 | 15.166 |
| 5 | 30.740 | 6 | 28.735 | 7 | 18.990 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.335

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.140548E-02

DRY PRESSURE - 26.52562

FLOWS - 0 0

TOTAL FLOW 0

1. The first part of the document is a list of names and addresses of the members of the committee.

2. The second part of the document is a list of names and addresses of the members of the committee.

3. The third part of the document is a list of names and addresses of the members of the committee.

4. The fourth part of the document is a list of names and addresses of the members of the committee.

5. The fifth part of the document is a list of names and addresses of the members of the committee.

6. The sixth part of the document is a list of names and addresses of the members of the committee.

7. The seventh part of the document is a list of names and addresses of the members of the committee.

SENSOR LIST

RECORD NUMBER - 113

DATE - 012

TIME - 11:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.59600 | 2 - | 26.59400 |
| 3 - | 26.59500 | 4 - | 26.59700 |
| 5 - | 26.61000 | 6 - | 26.60100 |

AVG PRESSURE 26.59669

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.866 | 2 | 65.106 | 3 | 65.427 | 4 | 65.336 |
| 5 | 65.969 | 6 | 65.559 | 7 | 64.930 | 8 | 64.969 |
| 9 | 64.662 | 10 | 64.187 | 11 | 65.456 | 12 | 65.584 |
| 13 | 74.390 | 14 | 64.328 | 15 | 17.518 | 16 | 17.832 |
| 17 | 17.199 | 18 | 18.354 | 19 | 17.645 | 20 | 16.877 |
| 21 | 18.141 | 22 | 73.820 | 23 | 71.187 | 24 | 71.267 |
| 25 | 71.859 | 26 | 71.610 | 27 | 63.919 | 28 | 64.019 |
| 29 | 62.364 | 30 | 66.302 | 31 | 64.401 | 32 | 65.881 |
| 33 | 66.255 | 34 | 67.834 | 35 | 69.099 | 36 | 68.713 |
| 37 | 67.937 | 38 | 65.509 | 39 | 68.403 | 40 | 67.606 |
| 41 | 63.107 | 42 | 67.956 | 43 | 65.109 | 44 | 63.064 |
| 45 | 64.718 | 46 | 64.780 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.659

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.961 | 2 | 28.674 | 3 | 28.421 | 4 | 17.410 |
| 5 | 30.641 | 6 | 28.838 | 7 | 18.992 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.379

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.155217E-02

DRY PRESSURE - 26.52514

FLOWS - 0 0

TOTAL FLOW 0

11-11-11

11-11-11

11-11-11

SENSOR LIST

RECORD NUMBER - 114

DATE - 012

TIME - 11:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.59600 | 2 - | 26.59300 |
| 3 - | 26.59400 | 4 - | 26.59700 |
| 5 - | 26.61000 | 6 - | 26.60000 |

AVG PRESSURE 26.59620

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.796 | 2 | 64.987 | 3 | 65.447 | 4 | 65.359 |
| 5 | 65.928 | 6 | 65.527 | 7 | 64.930 | 8 | 64.969 |
| 9 | 64.686 | 10 | 64.220 | 11 | 65.413 | 12 | 65.541 |
| 13 | 74.390 | 14 | 64.316 | 15 | 17.433 | 16 | 17.617 |
| 17 | 17.211 | 18 | 18.385 | 19 | 17.623 | 20 | 16.899 |
| 21 | 18.206 | 22 | 73.832 | 23 | 71.207 | 24 | 71.288 |
| 25 | 71.882 | 26 | 71.621 | 27 | 63.887 | 28 | 63.987 |
| 29 | 62.396 | 30 | 66.302 | 31 | 64.477 | 32 | 65.861 |
| 33 | 66.246 | 34 | 67.856 | 35 | 69.076 | 36 | 68.682 |
| 37 | 67.689 | 38 | 65.520 | 39 | 68.380 | 40 | 67.626 |
| 41 | 63.088 | 42 | 67.917 | 43 | 65.114 | 44 | 63.060 |
| 45 | 64.700 | 46 | 64.773 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.638

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.965 | 2 | 28.677 | 3 | 28.218 | 4 | 16.616 |
| 5 | 30.637 | 6 | 28.636 | 7 | 18.943 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.230

AMBIENT PRESS - 14.461

VAPOR PRESS - .0710578

DRY PRESSURE - 26.52514

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 115

DATE - 012

TIME - 11:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.59300 | 2 - | 26.59000 |
| 3 - | 26.59100 | 4 - | 26.59400 |
| 5 - | 26.60700 | 6 - | 26.59700 |

AVG PRESSURE 26.59319

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 65.746 | 2 | 64.976 | 3 | 65.416 | 4 | 65.305 |
| 5 | 65.892 | 6 | 65.419 | 7 | 64.907 | 8 | 64.980 |
| 9 | 64.716 | 10 | 64.209 | 11 | 65.422 | 12 | 65.530 |
| 13 | 74.347 | 14 | 64.296 | 15 | 17.314 | 16 | 17.543 |
| 17 | 17.146 | 18 | 18.032 | 19 | 17.614 | 20 | 16.930 |
| 21 | 18.206 | 22 | 73.843 | 23 | 71.230 | 24 | 71.322 |
| 25 | 71.936 | 26 | 71.621 | 27 | 63.887 | 28 | 63.965 |
| 29 | 62.384 | 30 | 66.291 | 31 | 64.369 | 32 | 65.870 |
| 33 | 66.212 | 34 | 67.845 | 35 | 69.110 | 36 | 68.768 |
| 37 | 67.872 | 38 | 65.509 | 39 | 68.380 | 40 | 67.615 |
| 41 | 63.095 | 42 | 67.956 | 43 | 65.076 | 44 | 63.075 |
| 45 | 64.718 | 46 | 64.791 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 59.623

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.859 | 2 | 28.685 | 3 | 28.315 | 4 | 12.305 |
| 5 | 30.435 | 6 | 28.441 | 7 | 18.941 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.022

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.037089E-02

DRY PRESSURE - 26.52282

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 116

DATE - 012

TIME - 12: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.59200 | 2 - | 26.59000 |
| 3 - | 26.59100 | 4 - | 26.59300 |
| 5 - | 26.60600 | 6 - | 26.59700 |

AVG PRESSURE 26.59269

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 65.769 | 2 | 64.980 | 3 | 65.312 | 4 | 65.221 |
| 5 | 65.892 | 6 | 65.466 | 7 | 64.934 | 8 | 64.811 |
| 9 | 64.608 | 10 | 64.117 | 11 | 65.384 | 12 | 65.471 |
| 13 | 74.329 | 14 | 64.269 | 15 | 17.341 | 16 | 17.709 |
| 17 | 17.153 | 18 | 17.686 | 19 | 17.587 | 20 | 16.872 |
| 21 | 18.333 | 22 | 73.863 | 23 | 71.230 | 24 | 71.331 |
| 25 | 71.945 | 26 | 71.642 | 27 | 63.876 | 28 | 63.965 |
| 29 | 62.353 | 30 | 66.280 | 31 | 64.488 | 32 | 65.850 |
| 33 | 66.203 | 34 | 67.845 | 35 | 69.067 | 36 | 68.768 |
| 37 | 67.818 | 38 | 65.487 | 39 | 68.392 | 40 | 67.552 |
| 41 | 63.075 | 42 | 67.924 | 43 | 65.098 | 44 | 63.064 |
| 45 | 64.706 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 59.598

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.758 | 2 | 28.670 | 3 | 28.214 | 4 | 12.775 |
| 5 | 30.843 | 6 | 28.544 | 7 | 18.988 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.035

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.041205E-02

DRY PRESSURE - 26.52228

FLOWS - 0 0

TOTAL FLOW 0

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100-100000

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100-100000

100-100000

SENSOR LIST

RECORD NUMBER - 117

DATE - 012

TIME --12:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.59200 | 2 - | 26.58900 |
| 3 - | 26.59000 | 4 - | 26.59300 |
| 5 - | 26.60600 | 6 - | 26.59600 |

AVG PRESSURE 26.59219

RTD/S

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|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.692 | 2 | 64.960 | 3 | 65.323 | 4 | 65.233 |
| 5 | 65.860 | 6 | 65.381 | 7 | 64.837 | 8 | 64.888 |
| 9 | 64.628 | 10 | 64.137 | 11 | 65.341 | 12 | 65.449 |
| 13 | 74.309 | 14 | 64.215 | 15 | 17.375 | 16 | 17.932 |
| 17 | 17.237 | 18 | 17.494 | 19 | 17.587 | 20 | 16.881 |
| 21 | 18.461 | 22 | 73.863 | 23 | 71.230 | 24 | 71.342 |
| 25 | 71.902 | 26 | 71.664 | 27 | 63.907 | 28 | 63.965 |
| 29 | 62.342 | 30 | 66.280 | 31 | 64.455 | 32 | 65.958 |
| 33 | 66.203 | 34 | 67.825 | 35 | 69.056 | 36 | 68.736 |
| 37 | 67.764 | 38 | 65.498 | 39 | 68.371 | 40 | 67.595 |
| 41 | 63.064 | 42 | 67.924 | 43 | 65.087 | 44 | 63.055 |
| 45 | 64.684 | 46 | 64.780 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.588

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.758 | 2 | 28.677 | 3 | 28.315 | 4 | 15.493 |
| 5 | 30.744 | 6 | 28.434 | 7 | 18.990 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.149

AMBIENT PRESS - 14.461

VAPOR PRESS - .0707897

DRY PRESSURE - 26.5214

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 118

DATE - 012

TIME - 12:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58900 | 2 - | 26.58700 |
| 3 - | 26.58800 | 4 - | 26.59000 |
| 5 - | 26.60300 | 6 - | 26.59300 |

AVG PRESSURE 26.58963

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.654 | 2 | 64.872 | 3 | 65.236 | 4 | 65.136 |
| 5 | 65.842 | 6 | 65.369 | 7 | 64.837 | 8 | 64.800 |
| 9 | 64.558 | 10 | 64.083 | 11 | 65.276 | 12 | 65.383 |
| 13 | 74.341 | 14 | 64.181 | 15 | 17.395 | 16 | 18.019 |
| 17 | 17.419 | 18 | 17.407 | 19 | 17.576 | 20 | 16.892 |
| 21 | 18.398 | 22 | 73.886 | 23 | 71.261 | 24 | 71.365 |
| 25 | 71.988 | 26 | 71.673 | 27 | 63.876 | 28 | 63.953 |
| 29 | 62.333 | 30 | 66.280 | 31 | 64.540 | 32 | 65.958 |
| 33 | 66.170 | 34 | 67.813 | 35 | 69.067 | 36 | 68.693 |
| 37 | 67.710 | 38 | 65.477 | 39 | 68.349 | 40 | 67.552 |
| 41 | 63.068 | 42 | 67.917 | 43 | 65.069 | 44 | 63.069 |
| 45 | 64.688 | 46 | 64.773 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.558

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.766 | 2 | 28.689 | 3 | 28.319 | 4 | 12.346 |
| 5 | 30.542 | 6 | 28.441 | 7 | 18.992 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.020

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.036444E-02

DRY PRESSURE - 26.51926

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 119

DATE - 012

TIME - 12:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58900 | 2 - | 26.58700 |
| 3 - | 26.58800 | 4 - | 26.59000 |
| 5 - | 26.60300 | 6 - | 26.59300 |

AVG PRESSURE 26.58963

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.672 | 2 | 64.867 | 3 | 65.211 | 4 | 65.142 |
| 5 | 65.784 | 6 | 65.354 | 7 | 64.779 | 8 | 64.687 |
| 9 | 64.499 | 10 | 64.015 | 11 | 65.228 | 12 | 65.401 |
| 13 | 74.336 | 14 | 64.134 | 15 | 17.710 | 16 | 17.713 |
| 17 | 17.211 | 18 | 17.337 | 19 | 17.580 | 20 | 16.888 |
| 21 | 18.076 | 22 | 73.917 | 23 | 71.304 | 24 | 71.365 |
| 25 | 71.999 | 26 | 71.673 | 27 | 63.822 | 28 | 63.922 |
| 29 | 62.342 | 30 | 66.259 | 31 | 64.497 | 32 | 65.784 |
| 33 | 66.158 | 34 | 67.856 | 35 | 69.034 | 36 | 68.682 |
| 37 | 67.797 | 38 | 65.455 | 39 | 68.338 | 40 | 67.583 |
| 41 | 63.041 | 42 | 67.879 | 43 | 65.087 | 44 | 63.055 |
| 45 | 64.684 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.526

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.762 | 2 | 28.471 | 3 | 28.214 | 4 | 15.449 |
| 5 | 30.637 | 6 | 28.437 | 7 | 18.943 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 27.085

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.057776E-02

DRY PRESSURE - 26.51905

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 120

DATE - 012

TIME - 13: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58800 | 2 - | 26.58600 |
| 3 - | 26.58700 | 4 - | 26.59000 |
| 5 - | 26.60200 | 6 - | 26.59300 |

AVG PRESSURE 26.58883

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 65.629 | 2 | 64.852 | 3 | 65.181 | 4 | 65.093 |
| 5 | 65.752 | 6 | 65.327 | 7 | 64.806 | 8 | 64.714 |
| 9 | 64.434 | 10 | 64.009 | 11 | 65.267 | 12 | 65.383 |
| 13 | 74.264 | 14 | 64.170 | 15 | 17.641 | 16 | 17.559 |
| 17 | 16.980 | 18 | 17.268 | 19 | 17.576 | 20 | 16.881 |
| 21 | 18.087 | 22 | 73.928 | 23 | 71.284 | 24 | 71.385 |
| 25 | 72.010 | 26 | 71.673 | 27 | 63.864 | 28 | 63.911 |
| 29 | 62.375 | 30 | 66.259 | 31 | 64.509 | 32 | 65.881 |
| 33 | 66.106 | 34 | 67.825 | 35 | 69.045 | 36 | 68.779 |
| 37 | 67.797 | 38 | 65.466 | 39 | 68.306 | 40 | 67.615 |
| 41 | 63.041 | 42 | 67.879 | 43 | 65.087 | 44 | 63.055 |
| 45 | 64.672 | 46 | 64.780 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 59.516

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.555 | 2 | 28.286 | 3 | 28.112 | 4 | 14.229 |
| 5 | 30.435 | 6 | 28.327 | 7 | 18.894 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.912

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.000976E-02

DRY PRESSURE - 26.51882

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 121

DATE - 012

TIME - 13:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58600 | 2 - | 26.58400 |
| 3 - | 26.58500 | 4 - | 26.58800 |
| 5 - | 26.60000 | 6 - | 26.59100 |

AVG PRESSURE 26.58683

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.584 | 2 | 64.813 | 3 | 65.168 | 4 | 65.077 |
| 5 | 65.707 | 6 | 65.257 | 7 | 64.768 | 8 | 64.667 |
| 9 | 64.423 | 10 | 63.961 | 11 | 65.197 | 12 | 65.316 |
| 13 | 74.239 | 14 | 64.080 | 15 | 17.518 | 16 | 17.479 |
| 17 | 16.826 | 18 | 17.199 | 19 | 17.614 | 20 | 16.908 |
| 21 | 18.056 | 22 | 73.928 | 23 | 71.295 | 24 | 71.396 |
| 25 | 72.042 | 26 | 71.673 | 27 | 63.844 | 28 | 63.911 |
| 29 | 62.364 | 30 | 66.259 | 31 | 64.466 | 32 | 65.827 |
| 33 | 66.106 | 34 | 67.834 | 35 | 69.034 | 36 | 68.628 |
| 37 | 67.678 | 38 | 65.444 | 39 | 68.317 | 40 | 67.606 |
| 41 | 63.041 | 42 | 67.870 | 43 | 65.055 | 44 | 63.044 |
| 45 | 64.672 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.479

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.656 | 2 | 28.497 | 3 | 27.913 | 4 | 11.969 |
| 5 | 30.439 | 6 | 28.228 | 7 | 18.849 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.766

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.953398E-02

DRY PRESSURE - 26.51729

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 122

DATE - 012

TIME - 13:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58600 | 2 - | 26.58400 |
| 3 - | 26.58500 | 4 - | 26.58700 |
| 5 - | 26.60000 | 6 - | 26.59100 |

AVG PRESSURE 26.58669

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.552 | 2 | 64.789 | 3 | 65.121 | 4 | 65.064 |
| 5 | 65.698 | 6 | 65.221 | 7 | 64.689 | 8 | 64.694 |
| 9 | 64.391 | 10 | 63.903 | 11 | 65.204 | 12 | 65.300 |
| 13 | 74.212 | 14 | 64.087 | 15 | 17.513 | 16 | 17.796 |
| 17 | 16.864 | 18 | 17.161 | 19 | 17.607 | 20 | 16.946 |
| 21 | 18.014 | 22 | 73.960 | 23 | 71.284 | 24 | 71.428 |
| 25 | 72.021 | 26 | 71.707 | 27 | 63.876 | 28 | 63.911 |
| 29 | 62.353 | 30 | 66.248 | 31 | 64.401 | 32 | 65.924 |
| 33 | 66.095 | 34 | 67.782 | 35 | 69.034 | 36 | 68.617 |
| 37 | 67.743 | 38 | 65.455 | 39 | 68.317 | 40 | 67.583 |
| 41 | 63.021 | 42 | 67.836 | 43 | 65.055 | 44 | 63.033 |
| 45 | 64.664 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.469

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.453 | 2 | 28.486 | 3 | 27.913 | 4 | 17.321 |
| 5 | 30.336 | 6 | 28.228 | 7 | 18.943 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.950

AMBIENT PRESS - 14.461

VAPOR PRESS - 7.013448E-02

DRY PRESSURE - 26.51656

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 123

DATE - 012

TIME - 13:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58600 | 2 - | 26.58400 |
| 3 - | 26.58500 | 4 - | 26.58700 |
| 5 - | 26.60000 | 6 - | 26.59000 |

AVG PRESSURE 26.58663

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.510 | 2 | 64.732 | 3 | 65.107 | 4 | 65.007 |
| 5 | 65.698 | 6 | 65.164 | 7 | 64.655 | 8 | 64.640 |
| 9 | 64.337 | 10 | 63.923 | 11 | 65.116 | 12 | 65.244 |
| 13 | 74.232 | 14 | 64.042 | 15 | 17.513 | 16 | 18.093 |
| 17 | 16.907 | 18 | 17.118 | 19 | 17.629 | 20 | 16.935 |
| 21 | 18.056 | 22 | 73.983 | 23 | 71.315 | 24 | 71.439 |
| 25 | 71.999 | 26 | 71.707 | 27 | 63.833 | 28 | 63.890 |
| 29 | 62.321 | 30 | 66.248 | 31 | 64.423 | 32 | 65.892 |
| 33 | 66.095 | 34 | 67.834 | 35 | 69.022 | 36 | 68.607 |
| 37 | 67.570 | 38 | 65.487 | 39 | 68.306 | 40 | 67.563 |
| 41 | 63.010 | 42 | 67.859 | 43 | 65.044 | 44 | 63.021 |
| 45 | 64.664 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.447

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.559 | 2 | 28.257 | 3 | 27.917 | 4 | 13.901 |
| 5 | 30.134 | 6 | 28.129 | 7 | 18.941 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.778

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.957352E-02

DRY PRESSURE - 26.51705

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 124

DATE - 012

TIME - 14: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58400 | 2 - | 26.58200 |
| 3 - | 26.58300 | 4 - | 26.58500 |
| 5 - | 26.59700 | 6 - | 26.58800 |

AVG PRESSURE 26.58456

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.498 | 2 | 64.701 | 3 | 65.107 | 4 | 64.996 |
| 5 | 65.599 | 6 | 65.207 | 7 | 64.610 | 8 | 64.606 |
| 9 | 64.369 | 10 | 63.889 | 11 | 65.116 | 12 | 65.275 |
| 13 | 74.232 | 14 | 64.019 | 15 | 17.426 | 16 | 18.361 |
| 17 | 17.014 | 18 | 17.065 | 19 | 17.649 | 20 | 16.935 |
| 21 | 18.152 | 22 | 73.994 | 23 | 71.347 | 24 | 71.439 |
| 25 | 72.107 | 26 | 71.718 | 27 | 63.810 | 28 | 63.848 |
| 29 | 62.342 | 30 | 66.237 | 31 | 64.434 | 32 | 65.838 |
| 33 | 66.061 | 34 | 67.825 | 35 | 69.034 | 36 | 68.607 |
| 37 | 67.710 | 38 | 65.444 | 39 | 68.295 | 40 | 67.572 |
| 41 | 62.998 | 42 | 67.836 | 43 | 65.033 | 44 | 63.033 |
| 45 | 64.652 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.445

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.458 | 2 | 28.264 | 3 | 27.812 | 4 | 13.773 |
| 5 | 30.333 | 6 | 28.240 | 7 | 19.033 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.765

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.952869E-02

DRY PRESSURE - 26.51503

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 125

DATE - 012

TIME - 14:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58300 | 2 - | 26.58100 |
| 3 - | 26.58200 | 4 - | 26.58400 |
| 5 - | 26.59700 | 6 - | 26.58800 |

AVG PRESSURE 26.58369

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.487 | 2 | 64.662 | 3 | 65.006 | 4 | 64.949 |
| 5 | 65.610 | 6 | 65.149 | 7 | 64.605 | 8 | 64.485 |
| 9 | 64.380 | 10 | 63.873 | 11 | 65.120 | 12 | 65.228 |
| 13 | 74.216 | 14 | 64.037 | 15 | 17.305 | 16 | 18.281 |
| 17 | 17.457 | 18 | 16.922 | 19 | 17.656 | 20 | 16.930 |
| 21 | 18.110 | 22 | 74.014 | 23 | 71.327 | 24 | 71.462 |
| 25 | 72.096 | 26 | 71.707 | 27 | 63.844 | 28 | 63.857 |
| 29 | 62.310 | 30 | 66.237 | 31 | 64.497 | 32 | 65.807 |
| 33 | 66.041 | 34 | 67.782 | 35 | 69.022 | 36 | 68.607 |
| 37 | 67.561 | 38 | 65.432 | 39 | 68.295 | 40 | 67.563 |
| 41 | 62.987 | 42 | 67.836 | 43 | 65.010 | 44 | 63.021 |
| 45 | 64.652 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.418

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.453 | 2 | 28.185 | 3 | 27.811 | 4 | 11.407 |
| 5 | 30.130 | 6 | 28.228 | 7 | 18.802 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.627

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.908344E-02

DRY PRESSURE - 26.51461

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 126

DATE - 012

TIME - 14:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58300 | 2 - | 26.58100 |
| 3 - | 26.58200 | 4 - | 26.58400 |
| 5 - | 26.59700 | 6 - | 26.58700 |

AVG PRESSURE 26.58363

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.433 | 2 | 64.653 | 3 | 65.048 | 4 | 64.980 |
| 5 | 65.545 | 6 | 65.137 | 7 | 64.551 | 8 | 64.505 |
| 9 | 64.357 | 10 | 63.919 | 11 | 65.077 | 12 | 65.207 |
| 13 | 74.259 | 14 | 64.048 | 15 | 17.283 | 16 | 18.120 |
| 17 | 17.360 | 18 | 16.964 | 19 | 17.687 | 20 | 16.919 |
| 21 | 18.280 | 22 | 74.025 | 23 | 71.347 | 24 | 71.482 |
| 25 | 72.053 | 26 | 71.707 | 27 | 63.844 | 28 | 63.857 |
| 29 | 62.321 | 30 | 66.237 | 31 | 64.423 | 32 | 65.741 |
| 33 | 66.061 | 34 | 67.791 | 35 | 69.022 | 36 | 68.650 |
| 37 | 67.689 | 38 | 65.455 | 39 | 68.283 | 40 | 67.529 |
| 41 | 62.976 | 42 | 67.816 | 43 | 65.010 | 44 | 63.010 |
| 45 | 64.641 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.420

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.355 | 2 | 28.177 | 3 | 27.913 | 4 | 12.347 |
| 5 | 30.130 | 6 | 28.136 | 7 | 18.990 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.680

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.925467E-02

DRY PRESSURE - 26.51437

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 127

DATE - 012

TIME - 14:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58100 | 2 - | 26.58900 |
| 3 - | 26.58000 | 4 - | 26.58200 |
| 5 - | 26.59400 | 6 - | 26.58500 |

AVG PRESSURE 26.58455

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.370 | 2 | 64.581 | 3 | 65.021 | 4 | 64.931 |
| 5 | 65.502 | 6 | 65.088 | 7 | 64.535 | 8 | 64.455 |
| 9 | 64.337 | 10 | 63.846 | 11 | 65.019 | 12 | 65.167 |
| 13 | 74.275 | 14 | 63.987 | 15 | 17.225 | 16 | 17.912 |
| 17 | 17.291 | 18 | 17.087 | 19 | 17.649 | 20 | 16.924 |
| 21 | 18.215 | 22 | 74.037 | 23 | 71.347 | 24 | 71.493 |
| 25 | 72.130 | 26 | 71.718 | 27 | 63.864 | 28 | 63.848 |
| 29 | 62.321 | 30 | 66.226 | 31 | 64.531 | 32 | 65.850 |
| 33 | 65.976 | 34 | 67.813 | 35 | 69.022 | 36 | 68.704 |
| 37 | 67.646 | 38 | 65.423 | 39 | 68.252 | 40 | 67.563 |
| 41 | 62.976 | 42 | 67.793 | 43 | 64.990 | 44 | 63.010 |
| 45 | 64.641 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.392

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.355 | 2 | 28.181 | 3 | 27.815 | 4 | 12.155 |
| 5 | 30.229 | 6 | 28.235 | 7 | 18.941 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.662

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.919434E-02

DRY PRESSURE - 26.51535

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 128

DATE - 012

TIME - 15: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58000 | 2 - | 26.57800 |
| 3 - | 26.57900 | 4 - | 26.58100 |
| 5 - | 26.59400 | 6 - | 26.58500 |

AVG PRESSURE 26.58069

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.275 | 2 | 64.496 | 3 | 65.064 | 4 | 64.856 |
| 5 | 65.495 | 6 | 65.122 | 7 | 64.481 | 8 | 64.563 |
| 9 | 64.330 | 10 | 63.815 | 11 | 65.039 | 12 | 65.147 |
| 13 | 74.264 | 14 | 63.976 | 15 | 17.375 | 16 | 17.709 |
| 17 | 17.110 | 18 | 18.178 | 19 | 17.649 | 20 | 16.977 |
| 21 | 18.199 | 22 | 74.041 | 23 | 71.417 | 24 | 71.509 |
| 25 | 72.155 | 26 | 71.700 | 27 | 63.837 | 28 | 63.830 |
| 29 | 62.337 | 30 | 66.210 | 31 | 64.502 | 32 | 65.928 |
| 33 | 66.003 | 34 | 67.795 | 35 | 69.007 | 36 | 68.675 |
| 37 | 67.554 | 38 | 65.417 | 39 | 68.245 | 40 | 67.577 |
| 41 | 62.980 | 42 | 67.798 | 43 | 64.994 | 44 | 63.006 |
| 45 | 64.645 | 46 | 64.773 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.393

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.352 | 2 | 28.072 | 3 | 27.710 | 4 | 17.689 |
| 5 | 30.027 | 6 | 28.133 | 7 | 19.127 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.822

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.971525E-02

DRY PRESSURE - 26.51098

FLOWS - 0 0

TOTAL FLOW 0

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11-11-11

11-11-11

11-11-11

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SENSOR LIST

RECORD NUMBER - 129

DATE - 012

TIME - 15:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.58000 | 2 - | 26.57800 |
| 3 - | 26.57900 | 4 - | 26.58100 |
| 5 - | 26.59300 | 6 - | 26.58400 |

AVG PRESSURE 26.58056

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.228 | 2 | 64.453 | 3 | 65.107 | 4 | 64.822 |
| 5 | 65.405 | 6 | 65.176 | 7 | 64.405 | 8 | 64.455 |
| 9 | 64.369 | 10 | 63.846 | 11 | 65.062 | 12 | 65.147 |
| 13 | 74.255 | 14 | 63.999 | 15 | 17.256 | 16 | 17.483 |
| 17 | 17.110 | 18 | 18.274 | 19 | 17.661 | 20 | 17.022 |
| 21 | 18.221 | 22 | 74.062 | 23 | 71.397 | 24 | 71.520 |
| 25 | 72.143 | 26 | 71.743 | 27 | 63.815 | 28 | 63.809 |
| 29 | 62.303 | 30 | 66.221 | 31 | 64.448 | 32 | 65.854 |
| 33 | 66.014 | 34 | 67.807 | 35 | 68.995 | 36 | 68.601 |
| 37 | 67.671 | 38 | 65.417 | 39 | 68.256 | 40 | 67.545 |
| 41 | 62.967 | 42 | 67.793 | 43 | 65.001 | 44 | 63.010 |
| 45 | 64.630 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.377

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.254 | 2 | 28.091 | 3 | 27.710 | 4 | 13.951 |
| 5 | 30.027 | 6 | 28.239 | 7 | 18.896 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.660

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.918949E-02

DRY PRESSURE - 26.51137

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 130

DATE - 012

TIME - 15:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57900 | 2 - | 26.57700 |
| 3 - | 26.57700 | 4 - | 26.58000 |
| 5 - | 26.59200 | 6 - | 26.58300 |

AVG PRESSURE 26.57942

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.124 | 2 | 64.345 | 3 | 65.150 | 4 | 64.791 |
| 5 | 65.344 | 6 | 65.187 | 7 | 64.416 | 8 | 64.444 |
| 9 | 64.439 | 10 | 63.912 | 11 | 64.985 | 12 | 65.158 |
| 13 | 74.255 | 14 | 64.064 | 15 | 17.256 | 16 | 17.313 |
| 17 | 17.110 | 18 | 18.231 | 19 | 17.649 | 20 | 17.064 |
| 21 | 18.230 | 22 | 74.084 | 23 | 71.397 | 24 | 71.552 |
| 25 | 72.166 | 26 | 71.754 | 27 | 63.804 | 28 | 63.809 |
| 29 | 62.292 | 30 | 66.210 | 31 | 64.331 | 32 | 65.757 |
| 33 | 66.003 | 34 | 67.795 | 35 | 68.984 | 36 | 68.578 |
| 37 | 67.651 | 38 | 65.394 | 39 | 68.234 | 40 | 67.556 |
| 41 | 62.949 | 42 | 67.775 | 43 | 65.026 | 44 | 63.015 |
| 45 | 64.623 | 46 | 64.773 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.363

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 28.156 | 2 | 27.971 | 3 | 27.616 | 4 | 16.945 |
| 5 | 29.928 | 6 | 28.026 | 7 | 19.035 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.682

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.926026E-02

DRY PRESSURE - 26.51016

FLOWS - 0 0

TOTAL FLOW 0

2

1-10-1950

1-10-1950

1-10-1950

1-10-1950

.

SENSOR LIST

RECORD NUMBER - 131

DATE - 012

TIME - 15:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57700 | 2 - | 26.57500 |
| 3 - | 26.57600 | 4 - | 26.57900 |
| 5 - | 26.59100 | 6 - | 26.58200 |

AVG PRESSURE 26.57783

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.086 | 2 | 64.302 | 3 | 65.107 | 4 | 64.725 |
| 5 | 65.306 | 6 | 65.133 | 7 | 64.373 | 8 | 64.455 |
| 9 | 64.454 | 10 | 63.966 | 11 | 65.039 | 12 | 65.201 |
| 13 | 74.232 | 14 | 64.064 | 15 | 17.180 | 16 | 17.474 |
| 17 | 17.056 | 18 | 17.706 | 19 | 17.618 | 20 | 17.053 |
| 21 | 18.403 | 22 | 74.095 | 23 | 71.417 | 24 | 71.563 |
| 25 | 72.143 | 26 | 71.808 | 27 | 63.849 | 28 | 63.818 |
| 29 | 62.283 | 30 | 66.187 | 31 | 64.405 | 32 | 65.800 |
| 33 | 66.034 | 34 | 67.764 | 35 | 69.007 | 36 | 68.644 |
| 37 | 67.554 | 38 | 65.374 | 39 | 68.245 | 40 | 67.545 |
| 41 | 62.942 | 42 | 67.771 | 43 | 64.999 | 44 | 62.999 |
| 45 | 64.618 | 46 | 64.766 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.347

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.151 | 2 | 27.960 | 3 | 27.609 | 4 | 14.884 |
| 5 | 29.925 | 6 | 27.931 | 7 | 19.080 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.417

AMBIENT PRESS - 14.461

VAPOR PRESS - .0684061

DRY PRESSURE - 26.50942

FLOWS - 0 0

TOTAL FLOW 0

1840-1841

1842

1843-1844

1845

1846

1847

1848

SENSOR LIST

RECORD NUMBER - 132

DATE - 012

TIME - 16: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57700 | 2 - | 26.57500 |
| 3 - | 26.57600 | 4 - | 26.57800 |
| 5 - | 26.59000 | 6 - | 26.58100 |

AVG PRESSURE 26.57756

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.104 | 2 | 64.237 | 3 | 65.139 | 4 | 64.694 |
| 5 | 65.313 | 6 | 65.099 | 7 | 64.373 | 8 | 64.455 |
| 9 | 64.342 | 10 | 63.824 | 11 | 64.996 | 12 | 65.201 |
| 13 | 74.201 | 14 | 64.010 | 15 | 17.234 | 16 | 17.720 |
| 17 | 17.130 | 18 | 17.471 | 19 | 17.638 | 20 | 17.031 |
| 21 | 18.530 | 22 | 74.104 | 23 | 71.397 | 24 | 71.563 |
| 25 | 72.186 | 26 | 71.797 | 27 | 63.815 | 28 | 63.818 |
| 29 | 62.272 | 30 | 66.198 | 31 | 64.373 | 32 | 65.897 |
| 33 | 65.991 | 34 | 67.795 | 35 | 69.018 | 36 | 68.621 |
| 37 | 67.608 | 38 | 65.374 | 39 | 68.213 | 40 | 67.534 |
| 41 | 62.949 | 42 | 67.766 | 43 | 65.015 | 44 | 63.006 |
| 45 | 64.623 | 46 | 64.773 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.341

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.247 | 2 | 27.966 | 3 | 27.713 | 4 | 14.652 |
| 5 | 29.820 | 6 | 27.918 | 7 | 19.080 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.451

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.851607E-02

DRY PRESSURE - 26.50904

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 133

DATE - 012

TIME - 16:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57600 | 2 - | 26.57400 |
| 3 - | 26.57500 | 4 - | 26.57700 |
| 5 - | 26.58900 | 6 - | 26.58000 |

AVG PRESSURE 26.57656

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.027 | 2 | 64.194 | 3 | 65.107 | 4 | 64.671 |
| 5 | 65.270 | 6 | 65.099 | 7 | 64.342 | 8 | 64.424 |
| 9 | 64.308 | 10 | 63.781 | 11 | 64.931 | 12 | 65.147 |
| 13 | 74.189 | 14 | 64.064 | 15 | 17.276 | 16 | 17.923 |
| 17 | 17.195 | 18 | 17.375 | 19 | 17.638 | 20 | 17.064 |
| 21 | 18.461 | 22 | 74.134 | 23 | 71.455 | 24 | 71.579 |
| 25 | 72.173 | 26 | 71.770 | 27 | 63.864 | 28 | 63.794 |
| 29 | 62.299 | 30 | 66.183 | 31 | 64.412 | 32 | 65.784 |
| 33 | 65.964 | 34 | 67.782 | 35 | 68.991 | 36 | 68.693 |
| 37 | 67.678 | 38 | 65.381 | 39 | 68.209 | 40 | 67.529 |
| 41 | 62.917 | 42 | 67.755 | 43 | 64.961 | 44 | 62.994 |
| 45 | 64.603 | 46 | 64.762 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.328

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.256 | 2 | 27.858 | 3 | 27.507 | 4 | 15.406 |
| 5 | 30.027 | 6 | 27.111 | 7 | 18.988 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.224

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.779303E-02

DRY PRESSURE - 26.50876

FLOWS - 0 0

TOTAL FLOW 0

4-7

4-10-7

4-11-7
4-12-7
4-13-7
4-14-7
4-15-7
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4-24-7
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4-26-7
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4-147-7
4-148-7
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4-195-7
4-196-7
4-197-7
4-198-7
4-199-7
4-200-7

4-201-7

4

SENSOR LIST

RECORD NUMBER - 134

DATE - 012

TIME - 16:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57500 | 2 - | 26.57300 |
| 3 - | 26.57400 | 4 - | 26.57600 |
| 5 - | 26.58800 | 6 - | 26.57900 |

AVG PRESSURE 26.57556

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.034 | 2 | 64.194 | 3 | 65.053 | 4 | 64.629 |
| 5 | 65.286 | 6 | 65.067 | 7 | 64.288 | 8 | 64.370 |
| 9 | 64.283 | 10 | 63.727 | 11 | 64.953 | 12 | 65.124 |
| 13 | 74.189 | 14 | 63.999 | 15 | 17.629 | 16 | 17.686 |
| 17 | 17.269 | 18 | 17.342 | 19 | 17.672 | 20 | 17.107 |
| 21 | 18.110 | 22 | 74.154 | 23 | 71.489 | 24 | 71.613 |
| 25 | 72.236 | 26 | 71.793 | 27 | 63.822 | 28 | 63.794 |
| 29 | 62.321 | 30 | 66.183 | 31 | 64.466 | 32 | 65.838 |
| 33 | 65.964 | 34 | 67.802 | 35 | 68.991 | 36 | 68.617 |
| 37 | 67.561 | 38 | 65.358 | 39 | 68.186 | 40 | 67.529 |
| 41 | 62.944 | 42 | 67.762 | 43 | 64.979 | 44 | 63.001 |
| 45 | 64.598 | 46 | 64.757 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.304

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.357 | 2 | 27.952 | 3 | 27.515 | 4 | 12.539 |
| 5 | 29.620 | 6 | 27.108 | 7 | 18.990 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.120

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.746101E-02

DRY PRESSURE - 26.5081

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 135

DATE - 012

TIME - 16:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57500 | 2 - | 26.57200 |
| 3 - | 26.57400 | 4 - | 26.57600 |
| 5 - | 26.58800 | 6 - | 26.57900 |

AVG PRESSURE 26.57526

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.969 | 2 | 64.178 | 3 | 64.983 | 4 | 64.570 |
| 5 | 65.177 | 6 | 65.074 | 7 | 64.283 | 8 | 64.354 |
| 9 | 64.261 | 10 | 63.831 | 11 | 64.884 | 12 | 65.056 |
| 13 | 74.271 | 14 | 63.994 | 15 | 17.571 | 16 | 17.501 |
| 17 | 17.041 | 18 | 17.253 | 19 | 17.656 | 20 | 17.145 |
| 21 | 18.302 | 22 | 74.177 | 23 | 71.444 | 24 | 71.602 |
| 25 | 72.247 | 26 | 71.770 | 27 | 63.779 | 28 | 63.771 |
| 29 | 62.299 | 30 | 66.174 | 31 | 64.466 | 32 | 65.807 |
| 33 | 65.944 | 34 | 67.791 | 35 | 69.013 | 36 | 68.585 |
| 37 | 67.646 | 38 | 65.347 | 39 | 68.186 | 40 | 67.563 |
| 41 | 62.922 | 42 | 67.762 | 43 | 64.990 | 44 | 63.001 |
| 45 | 64.598 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.290

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.349 | 2 | 27.970 | 3 | 27.405 | 4 | 13.384 |
| 5 | 30.026 | 6 | 27.213 | 7 | 18.989 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.158

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.758292E-02

DRY PRESSURE - 26.50768

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 136

DATE - 012

TIME - 17: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57500 | 2 - | 26.57200 |
| 3 - | 26.57300 | 4 - | 26.57600 |
| 5 - | 26.58800 | 6 - | 26.57900 |

AVG PRESSURE 26.57513

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 65.005 | 2 | 64.183 | 3 | 64.956 | 4 | 64.586 |
| 5 | 65.193 | 6 | 65.002 | 7 | 64.168 | 8 | 64.284 |
| 9 | 64.222 | 10 | 63.761 | 11 | 64.911 | 12 | 65.093 |
| 13 | 74.243 | 14 | 63.945 | 15 | 17.533 | 16 | 17.409 |
| 17 | 16.853 | 18 | 17.214 | 19 | 17.661 | 20 | 17.172 |
| 21 | 18.226 | 22 | 74.165 | 23 | 71.478 | 24 | 71.622 |
| 25 | 72.247 | 26 | 71.761 | 27 | 63.799 | 28 | 63.751 |
| 29 | 62.245 | 30 | 66.183 | 31 | 64.455 | 32 | 65.816 |
| 33 | 65.922 | 34 | 67.771 | 35 | 69.002 | 36 | 68.639 |
| 37 | 67.527 | 38 | 65.369 | 39 | 68.177 | 40 | 67.552 |
| 41 | 62.917 | 42 | 67.755 | 43 | 64.972 | 44 | 62.994 |
| 45 | 64.591 | 46 | 64.762 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD " 59.265

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.349 | 2 | 27.986 | 3 | 27.413 | 4 | 13.711 |
| 5 | 29.924 | 6 | 27.104 | 7 | 18.939 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.142

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.753176E-02

DRY PRESSURE - 26.5076

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 137

DATE - 012

TIME - 17:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57300 | 2 - | 26.57000 |
| 3 - | 26.57200 | 4 - | 26.57400 |
| 5 - | 26.58600 | 6 - | 26.57700 |

AVG PRESSURE 26.57326

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.985 | 2 | 64.106 | 3 | 65.010 | 4 | 64.532 |
| 5 | 65.173 | 6 | 64.991 | 7 | 64.222 | 8 | 64.284 |
| 9 | 64.191 | 10 | 63.653 | 11 | 64.868 | 12 | 65.027 |
| 13 | 74.232 | 14 | 63.891 | 15 | 17.513 | 16 | 17.633 |
| 17 | 16.842 | 18 | 17.172 | 19 | 17.672 | 20 | 17.192 |
| 21 | 18.226 | 22 | 74.197 | 23 | 71.509 | 24 | 71.656 |
| 25 | 72.247 | 26 | 71.824 | 27 | 63.799 | 28 | 63.739 |
| 29 | 62.279 | 30 | 66.174 | 31 | 64.380 | 32 | 65.784 |
| 33 | 65.901 | 34 | 67.782 | 35 | 69.013 | 36 | 68.607 |
| 37 | 67.678 | 38 | 65.390 | 39 | 68.166 | 40 | 67.552 |
| 41 | 62.926 | 42 | 67.766 | 43 | 64.952 | 44 | 63.006 |
| 45 | 64.603 | 46 | 64.773 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.261

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.353 | 2 | 27.787 | 3 | 27.406 | 4 | 14.655 |
| 5 | 29.825 | 6 | 27.008 | 7 | 19.033 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.142

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.753038E-02

DRY PRESSURE - 26.50573

FLOWS - 0 0

TOTAL FLOW 0

154

155

156

157

158



SENSOR LIST

RECORD NUMBER - 138

DATE - 012

TIME - 17:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57300 | 2 - | 26.57000 |
| 3 - | 26.57100 | 4 - | 26.57400 |
| 5 - | 26.58600 | 6 - | 26.57700 |

AVG PRESSURE 26.57312

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.942 | 2 | 64.075 | 3 | 64.879 | 4 | 64.511 |
| 5 | 65.150 | 6 | 64.971 | 7 | 64.179 | 8 | 64.219 |
| 9 | 64.157 | 10 | 63.718 | 11 | 64.868 | 12 | 65.016 |
| 13 | 74.275 | 14 | 63.902 | 15 | 17.491 | 16 | 17.955 |
| 17 | 16.884 | 18 | 17.118 | 19 | 17.703 | 20 | 17.149 |
| 21 | 18.302 | 22 | 74.219 | 23 | 71.498 | 24 | 71.656 |
| 25 | 72.270 | 26 | 71.815 | 27 | 63.790 | 28 | 63.728 |
| 29 | 62.256 | 30 | 66.162 | 31 | 64.477 | 32 | 65.904 |
| 33 | 65.944 | 34 | 67.771 | 35 | 68.991 | 36 | 68.650 |
| 37 | 67.410 | 38 | 65.335 | 39 | 68.177 | 40 | 67.529 |
| 41 | 62.926 | 42 | 67.787 | 43 | 64.961 | 44 | 62.994 |
| 45 | 64.591 | 46 | 64.773 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.242

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.447 | 2 | 27.666 | 3 | 27.413 | 4 | 15.351 |
| 5 | 29.520 | 6 | 27.218 | 7 | 18.941 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.199

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.771171E-02

DRY PRESSURE - 26.50541

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 139

DATE - 012

TIME - 17:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57300 | 2 - | 26.57000 |
| 3 - | 26.57100 | 4 - | 26.57400 |
| 5 - | 26.58600 | 6 - | 26.57700 |

AVG PRESSURE 26.57312

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.946 | 2 | 64.075 | 3 | 64.902 | 4 | 64.477 |
| 5 | 65.090 | 6 | 64.928 | 7 | 64.179 | 8 | 64.219 |
| 9 | 64.119 | 10 | 63.673 | 11 | 64.748 | 12 | 64.996 |
| 13 | 74.232 | 14 | 63.902 | 15 | 17.480 | 16 | 18.265 |
| 17 | 17.003 | 18 | 17.107 | 19 | 17.757 | 20 | 17.161 |
| 21 | 18.257 | 22 | 74.251 | 23 | 71.541 | 24 | 71.665 |
| 25 | 72.324 | 26 | 71.804 | 27 | 63.790 | 28 | 63.728 |
| 29 | 62.256 | 30 | 66.162 | 31 | 64.401 | 32 | 65.710 |
| 33 | 65.913 | 34 | 67.856 | 35 | 69.002 | 36 | 68.607 |
| 37 | 67.495 | 38 | 65.347 | 39 | 68.177 | 40 | 67.498 |
| 41 | 62.911 | 42 | 67.780 | 43 | 64.956 | 44 | 62.988 |
| 45 | 64.607 | 46 | 64.766 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.237

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.455 | 2 | 27.659 | 3 | 27.406 | 4 | 14.926 |
| 5 | 29.722 | 6 | 27.104 | 7 | 18.988 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.169

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.761554E-02

DRY PRESSURE - 26.50551

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 140

DATE - 012

TIME - 18: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57000 | 2 - | 26.56800 |
| 3 - | 26.57000 | 4 - | 26.57200 |
| 5 - | 26.58400 | 6 - | 26.57500 |

AVG PRESSURE 26.57096

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.876 | 2 | 64.063 | 3 | 64.848 | 4 | 64.466 |
| 5 | 65.108 | 6 | 64.905 | 7 | 64.125 | 8 | 64.196 |
| 9 | 64.114 | 10 | 63.696 | 11 | 64.769 | 12 | 64.953 |
| 13 | 74.178 | 14 | 63.879 | 15 | 17.287 | 16 | 18.350 |
| 17 | 17.515 | 18 | 16.937 | 19 | 17.768 | 20 | 17.181 |
| 21 | 18.302 | 22 | 74.240 | 23 | 71.552 | 24 | 71.676 |
| 25 | 72.333 | 26 | 71.824 | 27 | 63.790 | 28 | 63.728 |
| 29 | 62.288 | 30 | 66.162 | 31 | 64.412 | 32 | 65.861 |
| 33 | 65.901 | 34 | 67.771 | 35 | 69.013 | 36 | 68.639 |
| 37 | 67.581 | 38 | 65.347 | 39 | 68.155 | 40 | 67.518 |
| 41 | 62.917 | 42 | 67.787 | 43 | 64.972 | 44 | 62.994 |
| 45 | 64.603 | 46 | 64.762 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.232

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.349 | 2 | 27.791 | 3 | 27.316 | 4 | 14.089 |
| 5 | 29.620 | 6 | 27.207 | 7 | 19.033 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.123

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.747235E-02

DRY PRESSURE - 26.50349

FLOWS - 0 0

TOTAL FLOW 0



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SENSOR LIST

RECORD NUMBER - 141

DATE - 012

TIME - 18:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.57000 | 2 - | 26.56800 |
| 3 - | 26.56900 | 4 - | 26.57200 |
| 5 - | 26.58400 | 6 - | 26.57500 |

AVG PRESSURE 26.57083

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.811 | 2 | 64.000 | 3 | 64.848 | 4 | 64.446 |
| 5 | 65.053 | 6 | 64.874 | 7 | 64.094 | 8 | 64.196 |
| 9 | 64.103 | 10 | 63.610 | 11 | 64.769 | 12 | 64.930 |
| 13 | 74.124 | 14 | 63.879 | 15 | 17.267 | 16 | 18.147 |
| 17 | 17.410 | 18 | 16.937 | 19 | 17.768 | 20 | 17.172 |
| 21 | 18.483 | 22 | 74.274 | 23 | 71.575 | 24 | 71.676 |
| 25 | 72.290 | 26 | 71.847 | 27 | 63.768 | 28 | 63.697 |
| 29 | 62.256 | 30 | 66.151 | 31 | 64.358 | 32 | 65.827 |
| 33 | 65.858 | 34 | 67.782 | 35 | 68.991 | 36 | 68.628 |
| 37 | 67.570 | 38 | 65.315 | 39 | 68.144 | 40 | 67.541 |
| 41 | 62.883 | 42 | 67.787 | 43 | 64.929 | 44 | 62.994 |
| 45 | 64.580 | 46 | 64.762 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.211

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.447 | 2 | 27.558 | 3 | 27.206 | 4 | 15.126 |
| 5 | 29.619 | 6 | 27.115 | 7 | 18.990 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.096

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.738557E-02

DRY PRESSURE - 26.50344

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 142

DATE - 012

TIME - 18:30:26

PRESSURES

| | | | | | |
|---|---|----------|---|---|----------|
| 1 | - | 26.57000 | 2 | - | 26.56800 |
| 3 | - | 26.56900 | 4 | - | 26.57200 |
| 5 | - | 26.58400 | 6 | - | 26.57500 |

AVG PRESSURE 26.57083

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.858 | 2 | 63.978 | 3 | 64.848 | 4 | 64.403 |
| 5 | 65.035 | 6 | 64.874 | 7 | 64.060 | 8 | 64.142 |
| 9 | 64.107 | 10 | 63.630 | 11 | 64.748 | 12 | 64.953 |
| 13 | 74.124 | 14 | 63.825 | 15 | 17.256 | 16 | 18.019 |
| 17 | 17.365 | 18 | 17.042 | 19 | 17.746 | 20 | 17.161 |
| 21 | 18.642 | 22 | 74.305 | 23 | 71.575 | 24 | 71.730 |
| 25 | 72.344 | 26 | 71.824 | 27 | 63.799 | 28 | 63.717 |
| 29 | 62.236 | 30 | 66.151 | 31 | 64.455 | 32 | 65.881 |
| 33 | 65.879 | 34 | 67.813 | 35 | 69.013 | 36 | 68.628 |
| 37 | 67.527 | 38 | 65.326 | 39 | 68.144 | 40 | 67.541 |
| 41 | 62.911 | 42 | 67.791 | 43 | 64.965 | 44 | 62.988 |
| 45 | 64.573 | 46 | 64.766 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.208

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.556 | 2 | 27.569 | 3 | 27.213 | 4 | 16.756 |
| 5 | 29.417 | 6 | 27.206 | 7 | 18.894 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.184

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.766392E-02

DRY PRESSURE - 26.50316

FLOWS - 0 0

TOTAL FLOW 0

SENSOR LIST

RECORD NUMBER - 143

DATE - 012

TIME - 18:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.56800 | 2 - | 26.56600 |
| 3 - | 26.56700 | 4 - | 26.57000 |
| 5 - | 26.58200 | 6 - | 26.57200 |

AVG PRESSURE 26.56876

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.786 | 2 | 63.942 | 3 | 64.897 | 4 | 64.387 |
| 5 | 65.006 | 6 | 64.869 | 7 | 64.067 | 8 | 64.129 |
| 9 | 64.098 | 10 | 63.594 | 11 | 64.690 | 12 | 64.860 |
| 13 | 74.108 | 14 | 63.832 | 15 | 17.379 | 16 | 17.821 |
| 17 | 17.168 | 18 | 18.119 | 19 | 17.763 | 20 | 17.187 |
| 21 | 18.546 | 22 | 74.294 | 23 | 71.638 | 24 | 71.730 |
| 25 | 72.344 | 26 | 71.815 | 27 | 63.768 | 28 | 63.697 |
| 29 | 62.245 | 30 | 66.151 | 31 | 64.443 | 32 | 65.850 |
| 33 | 65.847 | 34 | 67.802 | 35 | 68.979 | 36 | 68.682 |
| 37 | 67.516 | 38 | 65.335 | 39 | 68.144 | 40 | 67.487 |
| 41 | 62.890 | 42 | 67.816 | 43 | 64.913 | 44 | 62.990 |
| 45 | 64.587 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.204

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|-------|
| 1 | 27.556 | 2 | 27.681 | 3 | 27.409 | 4 | 9.897 |
| 5 | 29.825 | 6 | 27.210 | 7 | 19.035 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.020

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.714636E-02

DRY PRESSURE - 26.50161

FLOWS - 0 0

TOTAL FLOW 0

2000-01-01

2000-01-01

2000-01-01

2000-01-01

2000-01-01

2000-01-01

SENSOR LIST

RECORD NUMBER - 144

DATE - 012

TIME - 19: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.56800 | 2 - | 26.56600 |
| 3 - | 26.56700 | 4 - | 26.57000 |
| 5 - | 26.58100 | 6 - | 26.57200 |

AVG PRESSURE 26.56869

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.741 | 2 | 63.892 | 3 | 64.825 | 4 | 64.315 |
| 5 | 64.941 | 6 | 64.820 | 7 | 64.029 | 8 | 64.111 |
| 9 | 64.067 | 10 | 63.576 | 11 | 64.663 | 12 | 64.930 |
| 13 | 74.104 | 14 | 63.837 | 15 | 17.384 | 16 | 17.537 |
| 17 | 17.130 | 18 | 18.305 | 19 | 17.746 | 20 | 17.245 |
| 21 | 18.353 | 22 | 74.305 | 23 | 71.575 | 24 | 71.741 |
| 25 | 72.376 | 26 | 71.804 | 27 | 63.747 | 28 | 63.685 |
| 29 | 62.279 | 30 | 66.140 | 31 | 64.326 | 32 | 65.850 |
| 33 | 65.825 | 34 | 67.802 | 35 | 68.991 | 36 | 68.596 |
| 37 | 67.570 | 38 | 65.304 | 39 | 68.155 | 40 | 67.541 |
| 41 | 62.890 | 42 | 67.793 | 43 | 64.913 | 44 | 63.001 |
| 45 | 64.576 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.175

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.455 | 2 | 27.587 | 3 | 27.213 | 4 | 13.808 |
| 5 | 29.417 | 6 | 27.206 | 7 | 19.033 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.065

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.728812E-02

DRY PRESSURE - 26.5014

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 145

DATE - 012

TIME - 19:15:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.56800 | 2 - | 26.56600 |
| 3 - | 26.56700 | 4 - | 26.56900 |
| 5 - | 26.58100 | 6 - | 26.57200 |

AVG PRESSURE 26.56856

RTD/S

| | | | | | | | |
|----|--------|----|--------|-------|--------|-------|--------|
| 1 | 64.741 | 2 | 63.827 | 3 | 64.825 | 4 | 64.306 |
| 5 | 64.941 | 6 | 64.820 | 7 | 64.017 | 8 | 64.079 |
| 9 | 64.035 | 10 | 63.587 | 11 | 64.663 | 12 | 64.876 |
| 13 | 74.158 | 14 | 63.848 | 15 | 17.234 | 16 | 17.387 |
| 17 | 17.153 | 18 | 18.305 | 19 | 17.746 | 20 | 17.234 |
| 21 | 18.622 | 22 | 74.294 | 23 | 71.595 | 24 | 71.762 |
| 25 | 72.430 | 26 | 71.836 | 27 | 63.736 | 28 | 63.663 |
| 29 | 62.245 | 30 | 66.129 | 31 | 64.304 | 32 | 65.816 |
| 33 | 65.793 | 34 | 67.771 | 35 | 68.979 | 36 | 68.596 |
| 37 | 67.495 | 38 | 65.293 | 39 | 68.132 | 40 | 67.518 |
| 41 | 62.879 | 42 | 67.825 | 43 | 64.925 | 44 | 63.001 |
| 45 | 64.576 | 46 | 64.769 | INACT | 0.000 | INACT | 0.000 |

INACT 0.000 INACT 0.000

AVG RTD 59.169

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.353 | 2 | 27.479 | 3 | 27.210 | 4 | 10.127 |
| 5 | 29.414 | 6 | 27.207 | 7 | 19.079 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 25.894

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.675183E-02

DRY PRESSURE - 26.50181

FLOWS - 0 0

TOTAL FLOW 0

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SENSOR LIST

RECORD NUMBER - 146

DATE - 012

TIME - 19:30:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.56500 | 2 - | 26.56400 |
| 3 - | 26.56500 | 4 - | 26.56700 |
| 5 - | 26.57900 | 6 - | 26.57000 |

AVG PRESSURE 26.56626

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.721 | 2 | 63.849 | 3 | 64.805 | 4 | 64.252 |
| 5 | 64.887 | 6 | 64.777 | 7 | 63.986 | 8 | 64.088 |
| 9 | 64.001 | 10 | 63.567 | 11 | 64.672 | 12 | 64.802 |
| 13 | 74.135 | 14 | 63.751 | 15 | 17.149 | 16 | 17.452 |
| 17 | 17.065 | 18 | 17.813 | 19 | 17.737 | 20 | 17.234 |
| 21 | 18.572 | 22 | 74.364 | 23 | 71.622 | 24 | 71.789 |
| 25 | 72.403 | 26 | 71.840 | 27 | 63.698 | 28 | 63.701 |
| 29 | 62.250 | 30 | 66.133 | 31 | 64.288 | 32 | 65.832 |
| 33 | 65.852 | 34 | 67.807 | 35 | 68.984 | 36 | 68.655 |
| 37 | 67.608 | 38 | 65.308 | 39 | 68.128 | 40 | 67.514 |
| 41 | 62.890 | 42 | 67.825 | 43 | 64.925 | 44 | 63.001 |
| 45 | 64.576 | 46 | 64.757 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.152

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.447 | 2 | 27.565 | 3 | 27.210 | 4 | 13.522 |
| 5 | 29.314 | 6 | 27.104 | 7 | 18.990 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.018

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.713931E-02

DRY PRESSURE - 26.49912

FLOWS - 0 0

TOTAL FLOW 0

Figure 6

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SENSOR LIST

RECORD NUMBER - 147

DATE - 012

TIME - 19:45:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.56500 | 2 - | 26.56300 |
| 3 - | 26.56400 | 4 - | 26.56700 |
| 5 - | 26.57900 | 6 - | 26.57000 |

AVG PRESSURE 26.56583

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.692 | 2 | 63.815 | 3 | 64.805 | 4 | 64.241 |
| 5 | 64.857 | 6 | 64.765 | 7 | 63.975 | 8 | 64.014 |
| 9 | 64.049 | 10 | 63.533 | 11 | 64.663 | 12 | 64.833 |
| 13 | 74.158 | 14 | 63.751 | 15 | 17.225 | 16 | 17.559 |
| 17 | 17.110 | 18 | 17.568 | 19 | 17.737 | 20 | 17.214 |
| 21 | 18.476 | 22 | 74.375 | 23 | 71.665 | 24 | 71.777 |
| 25 | 72.360 | 26 | 71.863 | 27 | 63.664 | 28 | 63.658 |
| 29 | 62.261 | 30 | 66.133 | 31 | 64.211 | 32 | 65.886 |
| 33 | 65.840 | 34 | 67.786 | 35 | 68.995 | 36 | 68.698 |
| 37 | 67.489 | 38 | 65.297 | 39 | 68.128 | 40 | 67.502 |
| 41 | 62.872 | 42 | 67.809 | 43 | 64.918 | 44 | 62.994 |
| 45 | 64.580 | 46 | 64.762 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.136

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.447 | 2 | 27.456 | 3 | 27.112 | 4 | 14.600 |
| 5 | 29.314 | 6 | 27.210 | 7 | 19.080 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 26.049

AMBIENT PRESS - 14.461

VAPOR PRESS - 6.723788E-02

DRY PRESSURE - 26.49859

FLOWS - 0 0

TOTAL FLOW 0



SENSOR LIST

RECORD NUMBER - 148

DATE - 012

TIME - 20: 0:26

PRESSURES

| | | | |
|-----|----------|-----|----------|
| 1 - | 26.56500 | 2 - | 26.56300 |
| 3 - | 26.56400 | 4 - | 26.56700 |
| 5 - | 26.57900 | 6 - | 26.57000 |

AVG PRESSURE 26.56583

RTD/S

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 64.617 | 2 | 63.795 | 3 | 64.794 | 4 | 64.209 |
| 5 | 64.848 | 6 | 64.786 | 7 | 63.975 | 8 | 64.057 |
| 9 | 64.049 | 10 | 63.576 | 11 | 64.609 | 12 | 64.865 |
| 13 | 74.158 | 14 | 63.740 | 15 | 17.287 | 16 | 17.805 |
| 17 | 17.184 | 18 | 17.407 | 19 | 17.725 | 20 | 17.245 |
| 21 | 18.369 | 22 | 74.386 | 23 | 71.688 | 24 | 71.811 |
| 25 | 72.425 | 26 | 71.872 | 27 | 63.675 | 28 | 63.667 |
| 29 | 62.250 | 30 | 66.124 | 31 | 64.211 | 32 | 65.897 |
| 33 | 65.852 | 34 | 67.786 | 35 | 69.038 | 36 | 68.644 |
| 37 | 67.511 | 38 | 65.297 | 39 | 68.117 | 40 | 67.502 |
| 41 | 62.863 | 42 | 67.809 | 43 | 64.918 | 44 | 62.983 |
| 45 | 64.569 | 46 | 64.762 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | | | | |

AVG RTD 59.134

DEW CELLS

| | | | | | | | |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 1 | 27.455 | 2 | 27.467 | 3 | 27.109 | 4 | 12.062 |
| 5 | 29.314 | 6 | 26.905 | 7 | 19.127 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | INACT | 0.000 |
| INACT | 0.000 | INACT | 0.000 | INACT | 0.000 | | |

AVG DEW CELL 25.886

AMBIENT PRESS - 0

VAPOR PRESS - 6.672639E-02

DRY PRESSURE - 26.4991

FLOWS - 0 0

TOTAL FLOW 0

1. The first part of the document is a list of names and addresses of the members of the committee.

DATE - 03-14-1989

ENVIRONMENT LISTING

TIME - 16:10:16

| REC
NUM | DATE | TIME | TEMP | VAPOR
PRESSURE | CORRECT.
PRESSURE | RELATIVE
HUMIDITY | AIR
DENSITY | PSIA/HR
VARIANCE |
|------------|------|------|---------|-------------------|----------------------|----------------------|----------------|---------------------|
| 52 | 11 | 2000 | 521.104 | 0.0881 | 26.6187 | 32.70 | 0.1379 | 0.00000 |
| 53 | 11 | 2015 | 521.043 | 0.0871 | 26.6168 | 32.38 | 0.1379 | -0.00778 |
| 54 | 11 | 2030 | 520.993 | 0.0872 | 26.6123 | 32.46 | 0.1379 | -0.01775 |
| 55 | 11 | 2045 | 520.938 | 0.0860 | 26.6109 | 32.10 | 0.1379 | -0.00571 |
| 56 | 11 | 2100 | 520.885 | 0.0857 | 26.6086 | 32.03 | 0.1379 | -0.00912 |
| 57 | 11 | 2115 | 520.855 | 0.0852 | 26.6057 | 31.88 | 0.1379 | -0.01154 |
| 58 | 11 | 2130 | 520.815 | 0.0844 | 26.6045 | 31.64 | 0.1379 | -0.00497 |
| 59 | 11 | 2145 | 520.754 | 0.0840 | 26.6027 | 31.55 | 0.1379 | -0.00706 |
| 60 | 11 | 2200 | 520.703 | 0.0841 | 26.5986 | 31.65 | 0.1379 | -0.01651 |
| 61 | 11 | 2215 | 520.662 | 0.0827 | 26.5982 | 31.16 | 0.1379 | -0.00173 |
| 62 | 11 | 2230 | 520.644 | 0.0831 | 26.5963 | 31.33 | 0.1379 | -0.00758 |
| 63 | 11 | 2245 | 520.600 | 0.0824 | 26.5923 | 31.12 | 0.1379 | -0.01585 |
| 64 | 11 | 2300 | 520.562 | 0.0820 | 26.5919 | 31.01 | 0.1379 | -0.00189 |
| 65 | 11 | 2315 | 520.539 | 0.0818 | 26.5904 | 30.95 | 0.1379 | -0.00581 |
| 66 | 11 | 2330 | 520.507 | 0.0814 | 26.5868 | 30.84 | 0.1379 | -0.01454 |
| 67 | 11 | 2345 | 520.451 | 0.0810 | 26.5855 | 30.77 | 0.1379 | -0.00487 |
| 69 | 12 | 15 | 520.377 | 0.0803 | 26.5804 | 30.57 | 0.1379 | -0.01347 |
| 70 | 12 | 30 | 520.334 | 0.0798 | 26.5794 | 30.41 | 0.1379 | -0.00402 |
| 71 | 12 | 45 | 520.297 | 0.0791 | 26.5787 | 30.19 | 0.1379 | -0.00289 |
| 72 | 12 | 100 | 520.264 | 0.0788 | 26.5752 | 30.12 | 0.1379 | -0.01392 |
| 73 | 12 | 115 | 520.221 | 0.0789 | 26.5746 | 30.19 | 0.1379 | -0.00245 |
| 74 | 12 | 130 | 520.191 | 0.0786 | 26.5735 | 30.13 | 0.1379 | -0.00421 |
| 75 | 12 | 145 | 520.155 | 0.0779 | 26.5713 | 29.88 | 0.1379 | -0.00903 |
| 76 | 12 | 200 | 520.150 | 0.0777 | 26.5705 | 29.82 | 0.1379 | -0.00327 |
| 77 | 12 | 215 | 520.112 | 0.0778 | 26.5690 | 29.90 | 0.1379 | -0.00576 |
| 78 | 12 | 230 | 520.085 | 0.0771 | 26.5669 | 29.66 | 0.1379 | -0.00839 |
| 79 | 12 | 245 | 520.059 | 0.0771 | 26.5657 | 29.70 | 0.1379 | -0.00495 |
| 80 | 12 | 300 | 520.034 | 0.0767 | 26.5651 | 29.57 | 0.1379 | -0.00240 |
| 81 | 12 | 315 | 520.004 | 0.0759 | 26.5629 | 29.29 | 0.1379 | -0.00873 |
| 82 | 12 | 330 | 519.980 | 0.0759 | 26.5612 | 29.31 | 0.1379 | -0.00692 |
| 83 | 12 | 345 | 519.958 | 0.0758 | 26.5603 | 29.29 | 0.1379 | -0.00356 |
| 84 | 12 | 400 | 519.927 | 0.0761 | 26.5577 | 29.45 | 0.1379 | -0.01042 |
| 85 | 12 | 415 | 519.899 | 0.0752 | 26.5569 | 29.10 | 0.1379 | -0.00299 |
| 86 | 12 | 430 | 519.877 | 0.0752 | 26.5559 | 29.15 | 0.1379 | -0.00430 |
| 87 | 12 | 445 | 519.859 | 0.0755 | 26.5541 | 29.26 | 0.1379 | -0.00715 |
| 88 | 12 | 500 | 519.839 | 0.0751 | 26.5530 | 29.14 | 0.1379 | -0.00432 |
| 89 | 12 | 515 | 519.813 | 0.0758 | 26.5516 | 29.43 | 0.1379 | -0.00549 |
| 90 | 12 | 530 | 519.787 | 0.0743 | 26.5521 | 28.88 | 0.1379 | 0.00195 |
| 91 | 12 | 545 | 519.759 | 0.0740 | 26.5500 | 28.81 | 0.1379 | -0.00825 |
| 92 | 12 | 600 | 519.749 | 0.0741 | 26.5497 | 28.85 | 0.1379 | -0.00133 |
| 93 | 12 | 615 | 519.734 | 0.0746 | 26.5482 | 29.05 | 0.1379 | -0.00587 |
| 94 | 12 | 630 | 519.715 | 0.0729 | 26.5470 | 28.43 | 0.1379 | -0.00489 |
| 95 | 12 | 645 | 519.693 | 0.0747 | 26.5446 | 29.12 | 0.1379 | -0.00971 |
| 96 | 12 | 700 | 519.671 | 0.0732 | 26.5455 | 28.58 | 0.1379 | 0.00351 |
| 97 | 12 | 715 | 519.655 | 0.0736 | 26.5419 | 28.73 | 0.1379 | -0.01428 |
| 98 | 12 | 730 | 519.610 | 0.0731 | 26.5416 | 28.61 | 0.1379 | -0.00110 |
| 99 | 12 | 745 | 519.585 | 0.0728 | 26.5410 | 28.49 | 0.1379 | -0.00255 |
| 100 | 12 | 800 | 519.571 | 0.0728 | 26.5386 | 28.53 | 0.1379 | -0.00970 |
| 101 | 12 | 815 | 519.547 | 0.0727 | 26.5380 | 28.51 | 0.1379 | -0.00214 |
| 102 | 12 | 830 | 519.542 | 0.0724 | 26.5373 | 28.39 | 0.1379 | -0.00274 |



ENVIRONMENT LISTING

DATE - 03-14-1989

TIME - 16:10:25

| REC
NUM | DATE | TIME | TEMP | VAPOR
PRESSURE | CORRECT.
PRESSURE | RELATIVE
HUMIDITY | AIR
DENSITY | PSIA/HR
VARIANCE |
|------------|------|------|---------|-------------------|----------------------|----------------------|----------------|---------------------|
| 103 | 12 | 845 | 519.521 | 0.0725 | 26.5352 | 28.46 | 0.1379 | -0.00846 |
| 104 | 12 | 900 | 519.500 | 0.0722 | 26.5352 | 28.36 | 0.1379 | -0.00020 |
| 105 | 12 | 915 | 519.475 | 0.0720 | 26.5347 | 28.32 | 0.1379 | -0.00182 |
| 106 | 12 | 930 | 519.439 | 0.0720 | 26.5324 | 28.34 | 0.1379 | -0.00938 |
| 107 | 12 | 945 | 519.464 | 0.0714 | 26.5329 | 28.09 | 0.1379 | 0.00205 |
| 108 | 12 | 1000 | 519.422 | 0.0714 | 26.5322 | 28.12 | 0.1379 | -0.00270 |
| 109 | 12 | 1015 | 519.412 | 0.0717 | 26.5297 | 28.23 | 0.1379 | -0.01025 |
| 110 | 12 | 1030 | 519.393 | 0.0719 | 26.5291 | 28.35 | 0.1379 | -0.00208 |
| 111 | 12 | 1045 | 519.369 | 0.0713 | 26.5293 | 28.14 | 0.1379 | 0.00069 |
| 112 | 12 | 1100 | 519.350 | 0.0714 | 26.5256 | 28.19 | 0.1379 | -0.01475 |
| 113 | 12 | 1115 | 519.330 | 0.0716 | 26.5251 | 28.27 | 0.1379 | -0.00192 |
| 114 | 12 | 1130 | 519.308 | 0.0711 | 26.5251 | 28.10 | 0.1379 | -0.00002 |
| 115 | 12 | 1145 | 519.293 | 0.0704 | 26.5228 | 27.84 | 0.1379 | -0.00925 |
| 116 | 12 | 1200 | 519.268 | 0.0704 | 26.5223 | 27.88 | 0.1379 | -0.00217 |
| 117 | 12 | 1215 | 519.258 | 0.0708 | 26.5214 | 28.04 | 0.1379 | -0.00351 |
| 118 | 12 | 1230 | 519.228 | 0.0704 | 26.5193 | 27.90 | 0.1379 | -0.00857 |
| 119 | 12 | 1245 | 519.196 | 0.0706 | 26.5190 | 28.02 | 0.1379 | -0.00085 |
| 120 | 12 | 1300 | 519.186 | 0.0700 | 26.5188 | 27.80 | 0.1379 | -0.00092 |
| 121 | 12 | 1315 | 519.149 | 0.0695 | 26.5173 | 27.65 | 0.1379 | -0.00610 |
| 122 | 12 | 1330 | 519.139 | 0.0701 | 26.5166 | 27.90 | 0.1379 | -0.00293 |
| 123 | 12 | 1345 | 519.117 | 0.0696 | 26.5171 | 27.70 | 0.1379 | 0.00198 |
| 124 | 12 | 1400 | 519.115 | 0.0695 | 26.5150 | 27.68 | 0.1379 | -0.00810 |
| 125 | 12 | 1415 | 519.088 | 0.0691 | 26.5146 | 27.53 | 0.1379 | -0.00168 |
| 126 | 12 | 1430 | 519.090 | 0.0693 | 26.5144 | 27.60 | 0.1379 | -0.00095 |
| 127 | 12 | 1445 | 519.062 | 0.0692 | 26.5154 | 27.60 | 0.1379 | 0.00392 |
| 128 | 12 | 1500 | 519.063 | 0.0697 | 26.5110 | 27.81 | 0.1379 | -0.01750 |
| 129 | 12 | 1515 | 519.047 | 0.0692 | 26.5114 | 27.61 | 0.1379 | 0.00157 |
| 130 | 12 | 1530 | 519.033 | 0.0693 | 26.5102 | 27.66 | 0.1379 | -0.00482 |
| 131 | 12 | 1545 | 519.017 | 0.0684 | 26.5094 | 27.33 | 0.1379 | -0.00298 |
| 132 | 12 | 1600 | 519.011 | 0.0685 | 26.5090 | 27.38 | 0.1379 | -0.00151 |
| 133 | 12 | 1615 | 518.998 | 0.0678 | 26.5088 | 27.10 | 0.1379 | -0.00111 |
| 134 | 12 | 1630 | 518.974 | 0.0675 | 26.5081 | 26.99 | 0.1379 | -0.00266 |
| 135 | 12 | 1645 | 518.960 | 0.0676 | 26.5077 | 27.06 | 0.1379 | -0.00169 |
| 136 | 12 | 1700 | 518.935 | 0.0675 | 26.5076 | 27.06 | 0.1379 | -0.00033 |
| 137 | 12 | 1715 | 518.931 | 0.0675 | 26.5057 | 27.06 | 0.1379 | -0.00747 |
| 138 | 12 | 1730 | 518.912 | 0.0677 | 26.5054 | 27.16 | 0.1379 | -0.00126 |
| 139 | 12 | 1745 | 518.907 | 0.0676 | 26.5055 | 27.12 | 0.1379 | 0.00038 |
| 140 | 12 | 1800 | 518.902 | 0.0675 | 26.5035 | 27.07 | 0.1379 | -0.00808 |
| 141 | 12 | 1815 | 518.881 | 0.0674 | 26.5034 | 27.05 | 0.1379 | -0.00018 |
| 142 | 12 | 1830 | 518.878 | 0.0677 | 26.5032 | 27.17 | 0.1379 | -0.00111 |
| 143 | 12 | 1845 | 518.874 | 0.0671 | 26.5016 | 26.97 | 0.1379 | -0.00621 |
| 144 | 12 | 1900 | 518.845 | 0.0673 | 26.5014 | 27.05 | 0.1379 | -0.00083 |
| 145 | 12 | 1915 | 518.839 | 0.0668 | 26.5018 | 26.84 | 0.1379 | 0.00161 |
| 146 | 12 | 1930 | 518.822 | 0.0671 | 26.4991 | 27.01 | 0.1379 | -0.01073 |
| 147 | 12 | 1945 | 518.806 | 0.0672 | 26.4986 | 27.07 | 0.1379 | -0.00213 |
| 148 | 12 | 2000 | 518.804 | 0.0667 | 26.4991 | 26.86 | 0.1379 | 0.00204 |

DATE - 03-14-1989

ENVIRONMENT LISTING
ZONE - 1

TIME - 16:10:50

| REC
NUM | DATE | TIME | TEMP | VAPOR
PRESSURE | CORRECT.
PRESSURE | RELATIVE
HUMIDITY | AIR
DENSITY | PSIA/HR
VARIANCE |
|------------|------|------|---------|-------------------|----------------------|----------------------|----------------|---------------------|
| 52 | 11 | 2000 | 528.277 | 0.0975 | 26.6070 | 28.16 | 0.1359 | 0.00000 |
| 53 | 11 | 2015 | 528.187 | 0.0968 | 26.6047 | 28.05 | 0.1360 | -0.00938 |
| 54 | 11 | 2030 | 528.108 | 0.0965 | 26.6005 | 28.04 | 0.1360 | -0.01677 |
| 55 | 11 | 2045 | 528.031 | 0.0954 | 26.5991 | 27.78 | 0.1360 | -0.00543 |
| 56 | 11 | 2100 | 527.937 | 0.0951 | 26.5969 | 27.80 | 0.1360 | -0.00904 |
| 57 | 11 | 2115 | 527.867 | 0.0941 | 26.5944 | 27.56 | 0.1360 | -0.00979 |
| 58 | 11 | 2130 | 527.802 | 0.0939 | 26.5926 | 27.57 | 0.1360 | -0.00729 |
| 59 | 11 | 2145 | 527.725 | 0.0930 | 26.5915 | 27.38 | 0.1360 | -0.00440 |
| 60 | 11 | 2200 | 527.647 | 0.0928 | 26.5877 | 27.40 | 0.1360 | -0.01531 |
| 61 | 11 | 2215 | 527.573 | 0.0919 | 26.5866 | 27.21 | 0.1360 | -0.00447 |
| 62 | 11 | 2230 | 527.519 | 0.0916 | 26.5854 | 27.17 | 0.1360 | -0.00484 |
| 63 | 11 | 2245 | 527.441 | 0.0911 | 26.5814 | 27.07 | 0.1360 | -0.01566 |
| 64 | 11 | 2300 | 527.393 | 0.0903 | 26.5812 | 26.91 | 0.1360 | -0.00113 |
| 65 | 11 | 2315 | 527.346 | 0.0899 | 26.5801 | 26.81 | 0.1360 | -0.00414 |
| 66 | 11 | 2330 | 527.278 | 0.0898 | 26.5762 | 26.86 | 0.1360 | -0.01578 |
| 67 | 11 | 2345 | 527.204 | 0.0891 | 26.5754 | 26.71 | 0.1361 | -0.00318 |
| 69 | 12 | 15 | 527.084 | 0.0882 | 26.5703 | 26.56 | 0.1361 | -0.01379 |
| 70 | 12 | 30 | 527.023 | 0.0876 | 26.5694 | 26.41 | 0.1361 | -0.00323 |
| 71 | 12 | 45 | 526.971 | 0.0869 | 26.5691 | 26.26 | 0.1361 | -0.00140 |
| 72 | 12 | 100 | 526.919 | 0.0864 | 26.5656 | 26.17 | 0.1361 | -0.01414 |
| 73 | 12 | 115 | 526.858 | 0.0860 | 26.5655 | 26.10 | 0.1361 | -0.00035 |
| 74 | 12 | 130 | 526.817 | 0.0854 | 26.5646 | 25.95 | 0.1361 | -0.00365 |
| 75 | 12 | 145 | 526.766 | 0.0851 | 26.5619 | 25.90 | 0.1361 | -0.01063 |
| 76 | 12 | 200 | 526.745 | 0.0849 | 26.5611 | 25.85 | 0.1361 | -0.00313 |
| 77 | 12 | 215 | 526.692 | 0.0847 | 26.5603 | 25.83 | 0.1361 | -0.00314 |
| 78 | 12 | 230 | 526.638 | 0.0839 | 26.5581 | 25.65 | 0.1361 | -0.00905 |
| 79 | 12 | 245 | 526.599 | 0.0838 | 26.5572 | 25.65 | 0.1361 | -0.00352 |
| 80 | 12 | 300 | 526.551 | 0.0831 | 26.5569 | 25.48 | 0.1361 | -0.00119 |
| 81 | 12 | 315 | 526.507 | 0.0825 | 26.5545 | 25.32 | 0.1361 | -0.00949 |
| 82 | 12 | 330 | 526.458 | 0.0823 | 26.5527 | 25.32 | 0.1361 | -0.00742 |
| 83 | 12 | 345 | 526.424 | 0.0824 | 26.5516 | 25.38 | 0.1361 | -0.00439 |
| 84 | 12 | 400 | 526.376 | 0.0821 | 26.5499 | 25.33 | 0.1361 | -0.00678 |
| 85 | 12 | 415 | 526.337 | 0.0818 | 26.5482 | 25.26 | 0.1361 | -0.00660 |
| 86 | 12 | 430 | 526.303 | 0.0815 | 26.5475 | 25.19 | 0.1361 | -0.00278 |
| 87 | 12 | 445 | 526.269 | 0.0812 | 26.5463 | 25.15 | 0.1362 | -0.00504 |
| 88 | 12 | 500 | 526.227 | 0.0812 | 26.5448 | 25.19 | 0.1362 | -0.00603 |
| 89 | 12 | 515 | 526.198 | 0.0807 | 26.5448 | 25.05 | 0.1362 | 0.00012 |
| 90 | 12 | 530 | 526.154 | 0.0803 | 26.5442 | 24.98 | 0.1362 | -0.00258 |
| 91 | 12 | 545 | 526.111 | 0.0799 | 26.5421 | 24.89 | 0.1362 | -0.00840 |
| 92 | 12 | 600 | 526.077 | 0.0801 | 26.5419 | 24.95 | 0.1362 | -0.00043 |
| 93 | 12 | 615 | 526.050 | 0.0797 | 26.5413 | 24.86 | 0.1362 | -0.00251 |
| 94 | 12 | 630 | 526.008 | 0.0795 | 26.5385 | 24.83 | 0.1362 | -0.01116 |
| 95 | 12 | 645 | 525.969 | 0.0794 | 26.5381 | 24.85 | 0.1362 | -0.00180 |
| 96 | 12 | 700 | 525.935 | 0.0791 | 26.5379 | 24.77 | 0.1362 | -0.00062 |
| 97 | 12 | 715 | 525.894 | 0.0789 | 26.5346 | 24.74 | 0.1362 | -0.01318 |
| 98 | 12 | 730 | 525.847 | 0.0786 | 26.5344 | 24.70 | 0.1362 | -0.00100 |
| 99 | 12 | 745 | 525.812 | 0.0781 | 26.5339 | 24.55 | 0.1362 | -0.00172 |
| 100 | 12 | 800 | 525.793 | 0.0783 | 26.5312 | 24.65 | 0.1362 | -0.01108 |
| 101 | 12 | 815 | 525.752 | 0.0776 | 26.5314 | 24.45 | 0.1362 | 0.00101 |
| 102 | 12 | 830 | 525.730 | 0.0777 | 26.5303 | 24.52 | 0.1362 | -0.00459 |

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ENVIRONMENT LISTING

DATE - 03-14-1989

ZONE - 1

TIME - 16:11:00

| REC
NUM | DATE | TIME | TEMP | VAPOR
PRESSURE | CORRECT.
PRESSURE | RELATIVE
HUMIDITY | AIR
DENSITY | PSIA/HR
VARIANCE |
|------------|------|------|---------|-------------------|----------------------|----------------------|----------------|---------------------|
| 103 | 12 | 845 | 525.696 | 0.0776 | 26.5284 | 24.50 | 0.1362 | -0.00740 |
| 104 | 12 | 900 | 525.667 | 0.0777 | 26.5278 | 24.57 | 0.1362 | -0.00266 |
| 105 | 12 | 915 | 525.631 | 0.0773 | 26.5277 | 24.45 | 0.1362 | -0.00009 |
| 106 | 12 | 930 | 525.576 | 0.0772 | 26.5253 | 24.48 | 0.1362 | -0.00970 |
| 107 | 12 | 945 | 525.597 | 0.0767 | 26.5258 | 24.30 | 0.1362 | 0.00200 |
| 108 | 12 | 1000 | 525.534 | 0.0763 | 26.5257 | 24.24 | 0.1362 | -0.00061 |
| 109 | 12 | 1015 | 525.507 | 0.0764 | 26.5231 | 24.28 | 0.1362 | -0.01016 |
| 110 | 12 | 1030 | 525.486 | 0.0760 | 26.5235 | 24.16 | 0.1362 | 0.00166 |
| 111 | 12 | 1045 | 525.444 | 0.0759 | 26.5231 | 24.17 | 0.1362 | -0.00162 |
| 112 | 12 | 1100 | 525.409 | 0.0761 | 26.5189 | 24.29 | 0.1362 | -0.01711 |
| 113 | 12 | 1115 | 525.377 | 0.0758 | 26.5192 | 24.19 | 0.1362 | 0.00151 |
| 114 | 12 | 1130 | 525.353 | 0.0754 | 26.5191 | 24.09 | 0.1362 | -0.00042 |
| 115 | 12 | 1145 | 525.323 | 0.0755 | 26.5160 | 24.14 | 0.1362 | -0.01239 |
| 116 | 12 | 1200 | 525.288 | 0.0752 | 26.5158 | 24.08 | 0.1362 | -0.00079 |
| 117 | 12 | 1215 | 525.264 | 0.0754 | 26.5151 | 24.16 | 0.1363 | -0.00281 |
| 118 | 12 | 1230 | 525.216 | 0.0754 | 26.5126 | 24.21 | 0.1363 | -0.01009 |
| 119 | 12 | 1245 | 525.182 | 0.0751 | 26.5130 | 24.13 | 0.1363 | 0.00135 |
| 120 | 12 | 1300 | 525.167 | 0.0746 | 26.5124 | 23.98 | 0.1363 | -0.00201 |
| 121 | 12 | 1315 | 525.125 | 0.0744 | 26.5106 | 23.96 | 0.1363 | -0.00732 |
| 122 | 12 | 1330 | 525.102 | 0.0742 | 26.5108 | 23.92 | 0.1363 | 0.00079 |
| 123 | 12 | 1345 | 525.065 | 0.0742 | 26.5108 | 23.94 | 0.1363 | 0.00010 |
| 124 | 12 | 1400 | 525.045 | 0.0739 | 26.5091 | 23.86 | 0.1363 | -0.00682 |
| 125 | 12 | 1415 | 525.009 | 0.0738 | 26.5082 | 23.87 | 0.1363 | -0.00379 |
| 126 | 12 | 1430 | 525.002 | 0.0739 | 26.5081 | 23.91 | 0.1363 | -0.00040 |
| 127 | 12 | 1445 | 524.958 | 0.0737 | 26.5113 | 23.89 | 0.1363 | 0.01274 |
| 128 | 12 | 1500 | 524.945 | 0.0735 | 26.5055 | 23.81 | 0.1363 | -0.02293 |
| 129 | 12 | 1515 | 524.920 | 0.0734 | 26.5056 | 23.81 | 0.1363 | 0.00032 |
| 130 | 12 | 1530 | 524.904 | 0.0730 | 26.5050 | 23.71 | 0.1363 | -0.00265 |
| 131 | 12 | 1545 | 524.880 | 0.0721 | 26.5039 | 23.43 | 0.1363 | -0.00423 |
| 132 | 12 | 1600 | 524.856 | 0.0724 | 26.5036 | 23.54 | 0.1363 | -0.00115 |
| 133 | 12 | 1615 | 524.829 | 0.0719 | 26.5031 | 23.42 | 0.1363 | -0.00223 |
| 134 | 12 | 1630 | 524.802 | 0.0721 | 26.5019 | 23.49 | 0.1363 | -0.00464 |
| 135 | 12 | 1645 | 524.775 | 0.0719 | 26.5016 | 23.45 | 0.1363 | -0.00117 |
| 136 | 12 | 1700 | 524.747 | 0.0719 | 26.5016 | 23.48 | 0.1363 | -0.00010 |
| 137 | 12 | 1715 | 524.727 | 0.0718 | 26.4997 | 23.45 | 0.1363 | -0.00753 |
| 138 | 12 | 1730 | 524.697 | 0.0718 | 26.4997 | 23.49 | 0.1363 | -0.00012 |
| 139 | 12 | 1745 | 524.678 | 0.0718 | 26.4997 | 23.50 | 0.1363 | 0.00004 |
| 140 | 12 | 1800 | 524.654 | 0.0716 | 26.4974 | 23.46 | 0.1363 | -0.00922 |
| 141 | 12 | 1815 | 524.622 | 0.0714 | 26.4976 | 23.40 | 0.1363 | 0.00098 |
| 142 | 12 | 1830 | 524.606 | 0.0715 | 26.4975 | 23.46 | 0.1363 | -0.00047 |
| 143 | 12 | 1845 | 524.589 | 0.0719 | 26.4951 | 23.61 | 0.1363 | -0.00973 |
| 144 | 12 | 1900 | 524.552 | 0.0714 | 26.4956 | 23.47 | 0.1363 | 0.00205 |
| 145 | 12 | 1915 | 524.540 | 0.0713 | 26.4957 | 23.43 | 0.1363 | 0.00063 |
| 146 | 12 | 1930 | 524.513 | 0.0714 | 26.4931 | 23.50 | 0.1363 | -0.01054 |
| 147 | 12 | 1945 | 524.496 | 0.0712 | 26.4928 | 23.43 | 0.1363 | -0.00102 |
| 148 | 12 | 2000 | 524.491 | 0.0712 | 26.4928 | 23.44 | 0.1363 | -0.00003 |

[illegible]

ॐ नमो भगवते वासुदेवाय ॥

DATE - 03-14-1989

ENVIRONMENT LISTING
ZONE - 2

TIME - 16:11:24

| REC
NUM | DATE | TIME | TEMP | VAPOR
PRESSURE | CORRECT.
PRESSURE | RELATIVE
HUMIDITY | AIR
DENSITY | PSIA/HR
VARIANCE |
|------------|------|------|---------|-------------------|----------------------|----------------------|----------------|---------------------|
| 52 | 11 | 2000 | 527.465 | 0.0924 | 26.6141 | 27.45 | 0.1362 | 0.00000 |
| 53 | 11 | 2015 | 527.456 | 0.0923 | 26.6112 | 27.43 | 0.1362 | -0.01170 |
| 54 | 11 | 2030 | 527.435 | 0.0916 | 26.6079 | 27.25 | 0.1362 | -0.01331 |
| 55 | 11 | 2045 | 527.415 | 0.0911 | 26.6059 | 27.10 | 0.1362 | -0.00773 |
| 56 | 11 | 2100 | 527.413 | 0.0906 | 26.6034 | 26.98 | 0.1361 | -0.01027 |
| 57 | 11 | 2115 | 527.391 | 0.0903 | 26.6007 | 26.88 | 0.1361 | -0.01047 |
| 58 | 11 | 2130 | 527.412 | 0.0898 | 26.5992 | 26.72 | 0.1361 | -0.00607 |
| 59 | 11 | 2145 | 527.394 | 0.0896 | 26.5969 | 26.68 | 0.1361 | -0.00920 |
| 60 | 11 | 2200 | 527.368 | 0.0895 | 26.5930 | 26.68 | 0.1361 | -0.01571 |
| 61 | 11 | 2215 | 527.377 | 0.0891 | 26.5919 | 26.54 | 0.1361 | -0.00427 |
| 62 | 11 | 2230 | 527.379 | 0.0888 | 26.5907 | 26.46 | 0.1361 | -0.00491 |
| 63 | 11 | 2245 | 527.365 | 0.0883 | 26.5862 | 26.32 | 0.1361 | -0.01803 |
| 64 | 11 | 2300 | 527.359 | 0.0879 | 26.5861 | 26.21 | 0.1361 | -0.00040 |
| 65 | 11 | 2315 | 527.349 | 0.0879 | 26.5841 | 26.21 | 0.1361 | -0.00787 |
| 66 | 11 | 2330 | 527.338 | 0.0873 | 26.5807 | 26.06 | 0.1361 | -0.01388 |
| 67 | 11 | 2345 | 527.339 | 0.0872 | 26.5793 | 26.01 | 0.1360 | -0.00526 |
| 69 | 12 | 15 | 527.344 | 0.0863 | 26.5742 | 25.73 | 0.1360 | -0.01546 |
| 70 | 12 | 30 | 527.331 | 0.0860 | 26.5730 | 25.67 | 0.1360 | -0.00500 |
| 71 | 12 | 45 | 527.330 | 0.0860 | 26.5710 | 25.67 | 0.1360 | -0.00800 |
| 72 | 12 | 100 | 527.323 | 0.0849 | 26.5686 | 25.34 | 0.1360 | -0.00950 |
| 73 | 12 | 115 | 527.317 | 0.0852 | 26.5678 | 25.45 | 0.1360 | -0.00333 |
| 74 | 12 | 130 | 527.316 | 0.0841 | 26.5679 | 25.11 | 0.1360 | 0.00052 |
| 75 | 12 | 145 | 527.312 | 0.0843 | 26.5647 | 25.17 | 0.1360 | -0.01270 |
| 76 | 12 | 200 | 527.323 | 0.0834 | 26.5646 | 24.90 | 0.1360 | -0.00060 |
| 77 | 12 | 215 | 527.312 | 0.0837 | 26.5623 | 25.01 | 0.1360 | -0.00931 |
| 78 | 12 | 230 | 527.311 | 0.0833 | 26.5602 | 24.87 | 0.1360 | -0.00816 |
| 79 | 12 | 245 | 527.300 | 0.0830 | 26.5590 | 24.78 | 0.1360 | -0.00469 |
| 80 | 12 | 300 | 527.312 | 0.0832 | 26.5578 | 24.85 | 0.1359 | -0.00505 |
| 81 | 12 | 315 | 527.306 | 0.0833 | 26.5547 | 24.89 | 0.1359 | -0.01236 |
| 82 | 12 | 330 | 527.303 | 0.0829 | 26.5536 | 24.76 | 0.1359 | -0.00432 |
| 83 | 12 | 345 | 527.302 | 0.0824 | 26.5531 | 24.62 | 0.1359 | -0.00208 |
| 84 | 12 | 400 | 527.293 | 0.0818 | 26.5512 | 24.46 | 0.1359 | -0.00771 |
| 85 | 12 | 415 | 527.310 | 0.0820 | 26.5495 | 24.50 | 0.1359 | -0.00671 |
| 86 | 12 | 430 | 527.300 | 0.0820 | 26.5485 | 24.50 | 0.1359 | -0.00400 |
| 87 | 12 | 445 | 527.305 | 0.0814 | 26.5476 | 24.31 | 0.1359 | -0.00349 |
| 88 | 12 | 500 | 527.310 | 0.0812 | 26.5463 | 24.26 | 0.1359 | -0.00535 |
| 89 | 12 | 515 | 527.299 | 0.0807 | 26.5458 | 24.10 | 0.1359 | -0.00179 |
| 90 | 12 | 530 | 527.306 | 0.0809 | 26.5446 | 24.17 | 0.1359 | -0.00491 |
| 91 | 12 | 545 | 527.291 | 0.0808 | 26.5427 | 24.15 | 0.1359 | -0.00763 |
| 92 | 12 | 600 | 527.296 | 0.0809 | 26.5421 | 24.17 | 0.1359 | -0.00226 |
| 93 | 12 | 615 | 527.283 | 0.0809 | 26.5411 | 24.18 | 0.1359 | -0.00401 |
| 94 | 12 | 630 | 527.283 | 0.0799 | 26.5396 | 23.89 | 0.1359 | -0.00618 |
| 95 | 12 | 645 | 527.284 | 0.0800 | 26.5385 | 23.92 | 0.1358 | -0.00446 |
| 96 | 12 | 700 | 527.292 | 0.0799 | 26.5381 | 23.88 | 0.1358 | -0.00148 |
| 97 | 12 | 715 | 527.288 | 0.0797 | 26.5353 | 23.81 | 0.1358 | -0.01101 |
| 98 | 12 | 730 | 527.275 | 0.0795 | 26.5345 | 23.77 | 0.1358 | -0.00330 |
| 99 | 12 | 745 | 527.282 | 0.0794 | 26.5336 | 23.74 | 0.1358 | -0.00378 |
| 100 | 12 | 800 | 527.274 | 0.0794 | 26.5316 | 23.73 | 0.1358 | -0.00774 |
| 101 | 12 | 815 | 527.254 | 0.0789 | 26.5311 | 23.62 | 0.1358 | -0.00225 |
| 102 | 12 | 830 | 527.276 | 0.0786 | 26.5304 | 23.51 | 0.1358 | -0.00275 |

25

25

25

25

25

DATE - 03-14-1989

ENVIRONMENT LISTING

ZONE - 2

TIME - 16:11:34

| REC
NUM | DATE | TIME | TEMP | VAPOR
PRESSURE | CORRECT.
PRESSURE | RELATIVE
HUMIDITY | AIR
DENSITY | PSIA/HR
VARIANCE |
|------------|------|------|---------|-------------------|----------------------|----------------------|----------------|---------------------|
| 103 | 12 | 845 | 527.268 | 0.0783 | 26.5287 | 23.40 | 0.1358 | -0.00655 |
| 104 | 12 | 900 | 527.273 | 0.0784 | 26.5286 | 23.44 | 0.1358 | -0.00050 |
| 105 | 12 | 915 | 527.268 | 0.0783 | 26.5277 | 23.41 | 0.1358 | -0.00362 |
| 106 | 12 | 930 | 527.243 | 0.0782 | 26.5258 | 23.42 | 0.1358 | -0.00784 |
| 107 | 12 | 945 | 527.272 | 0.0782 | 26.5258 | 23.40 | 0.1358 | 0.00004 |
| 108 | 12 | 1000 | 527.267 | 0.0779 | 26.5251 | 23.29 | 0.1358 | -0.00259 |
| 109 | 12 | 1015 | 527.260 | 0.0778 | 26.5232 | 23.28 | 0.1358 | -0.00771 |
| 110 | 12 | 1030 | 527.262 | 0.0776 | 26.5224 | 23.23 | 0.1358 | -0.00333 |
| 111 | 12 | 1045 | 527.265 | 0.0779 | 26.5221 | 23.30 | 0.1358 | -0.00101 |
| 112 | 12 | 1100 | 527.268 | 0.0774 | 26.5196 | 23.15 | 0.1358 | -0.01009 |
| 113 | 12 | 1115 | 527.258 | 0.0777 | 26.5183 | 23.24 | 0.1358 | -0.00499 |
| 114 | 12 | 1130 | 527.233 | 0.0771 | 26.5184 | 23.08 | 0.1358 | 0.00042 |
| 115 | 12 | 1145 | 527.266 | 0.0764 | 26.5161 | 22.84 | 0.1357 | -0.00922 |
| 116 | 12 | 1200 | 527.253 | 0.0769 | 26.5151 | 23.02 | 0.1357 | -0.00420 |
| 117 | 12 | 1215 | 527.246 | 0.0765 | 26.5150 | 22.91 | 0.1357 | -0.00047 |
| 118 | 12 | 1230 | 527.241 | 0.0764 | 26.5126 | 22.88 | 0.1357 | -0.00959 |
| 119 | 12 | 1245 | 527.240 | 0.0765 | 26.5125 | 22.89 | 0.1357 | -0.00018 |
| 120 | 12 | 1300 | 527.259 | 0.0760 | 26.5125 | 22.75 | 0.1357 | -0.00022 |
| 121 | 12 | 1315 | 527.224 | 0.0757 | 26.5108 | 22.69 | 0.1357 | -0.00686 |
| 122 | 12 | 1330 | 527.229 | 0.0757 | 26.5103 | 22.67 | 0.1357 | -0.00175 |
| 123 | 12 | 1345 | 527.212 | 0.0753 | 26.5107 | 22.56 | 0.1357 | 0.00163 |
| 124 | 12 | 1400 | 527.228 | 0.0757 | 26.5083 | 22.68 | 0.1357 | -0.00976 |
| 125 | 12 | 1415 | 527.205 | 0.0756 | 26.5074 | 22.65 | 0.1357 | -0.00337 |
| 126 | 12 | 1430 | 527.218 | 0.0753 | 26.5077 | 22.56 | 0.1357 | 0.00107 |
| 127 | 12 | 1445 | 527.233 | 0.0756 | 26.5054 | 22.65 | 0.1357 | -0.00938 |
| 128 | 12 | 1500 | 527.226 | 0.0752 | 26.5048 | 22.53 | 0.1357 | -0.00234 |
| 129 | 12 | 1515 | 527.221 | 0.0755 | 26.5045 | 22.63 | 0.1357 | -0.00123 |
| 130 | 12 | 1530 | 527.207 | 0.0748 | 26.5036 | 22.43 | 0.1357 | -0.00330 |
| 131 | 12 | 1545 | 527.206 | 0.0746 | 26.5029 | 22.35 | 0.1357 | -0.00289 |
| 132 | 12 | 1600 | 527.219 | 0.0745 | 26.5025 | 22.31 | 0.1357 | -0.00160 |
| 133 | 12 | 1615 | 527.227 | 0.0723 | 26.5037 | 21.66 | 0.1357 | 0.00468 |
| 134 | 12 | 1630 | 527.220 | 0.0721 | 26.5029 | 21.59 | 0.1357 | -0.00304 |
| 135 | 12 | 1645 | 527.222 | 0.0726 | 26.5024 | 21.75 | 0.1357 | -0.00211 |
| 136 | 12 | 1700 | 527.211 | 0.0722 | 26.5023 | 21.65 | 0.1357 | -0.00054 |
| 137 | 12 | 1715 | 527.230 | 0.0719 | 26.5011 | 21.53 | 0.1357 | -0.00471 |
| 138 | 12 | 1730 | 527.209 | 0.0723 | 26.5002 | 21.67 | 0.1357 | -0.00366 |
| 139 | 12 | 1745 | 527.215 | 0.0721 | 26.5004 | 21.61 | 0.1357 | 0.00082 |
| 140 | 12 | 1800 | 527.232 | 0.0723 | 26.4987 | 21.66 | 0.1357 | -0.00692 |
| 141 | 12 | 1815 | 527.220 | 0.0721 | 26.4984 | 21.60 | 0.1357 | -0.00096 |
| 142 | 12 | 1830 | 527.234 | 0.0722 | 26.4983 | 21.63 | 0.1357 | -0.00056 |
| 143 | 12 | 1845 | 527.232 | 0.0725 | 26.4960 | 21.70 | 0.1356 | -0.00896 |
| 144 | 12 | 1900 | 527.227 | 0.0722 | 26.4963 | 21.63 | 0.1356 | 0.00097 |
| 145 | 12 | 1915 | 527.213 | 0.0722 | 26.4958 | 21.64 | 0.1356 | -0.00200 |
| 146 | 12 | 1930 | 527.239 | 0.0719 | 26.4941 | 21.52 | 0.1356 | -0.00663 |
| 147 | 12 | 1945 | 527.230 | 0.0722 | 26.4933 | 21.62 | 0.1356 | -0.00319 |
| 148 | 12 | 2000 | 527.236 | 0.0713 | 26.4942 | 21.36 | 0.1356 | 0.00340 |

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4

5

DATE - 03-14-1989

ENVIRONMENT LISTING
ZONE - 3

TIME - 16:11:57

| REC
NUM | DATE | TIME | TEMP | VAPOR
PRESSURE | CORRECT.
PRESSURE | RELATIVE
HUMIDITY | AIR
DENSITY | PSIA/HR
VARIANCE |
|------------|------|------|---------|-------------------|----------------------|----------------------|----------------|---------------------|
| 52 | 11 | 2000 | 477.120 | 0.0475 | 26.6705 | 106.41 | 0.1509 | 0.00000 |
| 53 | 11 | 2015 | 477.086 | 0.0449 | 26.6701 | 100.81 | 0.1509 | -0.00172 |
| 54 | 11 | 2030 | 477.109 | 0.0467 | 26.6638 | 104.85 | 0.1508 | -0.02540 |
| 55 | 11 | 2045 | 477.084 | 0.0456 | 26.6619 | 102.50 | 0.1508 | -0.00758 |
| 56 | 11 | 2100 | 477.109 | 0.0453 | 26.6597 | 101.59 | 0.1508 | -0.00861 |
| 57 | 11 | 2115 | 477.242 | 0.0465 | 26.6550 | 103.56 | 0.1508 | -0.01871 |
| 58 | 11 | 2130 | 477.194 | 0.0443 | 26.6552 | 99.06 | 0.1508 | 0.00051 |
| 59 | 11 | 2145 | 477.112 | 0.0451 | 26.6519 | 101.07 | 0.1508 | -0.01289 |
| 60 | 11 | 2200 | 477.131 | 0.0461 | 26.6469 | 103.40 | 0.1507 | -0.02032 |
| 61 | 11 | 2215 | 477.136 | 0.0430 | 26.6480 | 96.24 | 0.1507 | 0.00475 |
| 62 | 11 | 2230 | 477.244 | 0.0457 | 26.6438 | 101.75 | 0.1507 | -0.01681 |
| 63 | 11 | 2245 | 477.285 | 0.0449 | 26.6401 | 99.83 | 0.1507 | -0.01490 |
| 64 | 11 | 2300 | 477.235 | 0.0455 | 26.6385 | 101.48 | 0.1507 | -0.00653 |
| 65 | 11 | 2315 | 477.289 | 0.0457 | 26.6363 | 101.69 | 0.1506 | -0.00887 |
| 66 | 11 | 2330 | 477.371 | 0.0449 | 26.6331 | 99.42 | 0.1506 | -0.01261 |
| 67 | 11 | 2345 | 477.287 | 0.0454 | 26.6306 | 101.07 | 0.1506 | -0.01025 |
| 69 | 12 | 15 | 477.259 | 0.0454 | 26.6256 | 101.20 | 0.1506 | -0.01093 |
| 70 | 12 | 30 | 477.233 | 0.0449 | 26.6241 | 100.16 | 0.1506 | -0.00593 |
| 71 | 12 | 45 | 477.198 | 0.0435 | 26.6235 | 97.25 | 0.1506 | -0.00247 |
| 72 | 12 | 100 | 477.198 | 0.0447 | 26.6193 | 99.96 | 0.1506 | -0.01683 |
| 73 | 12 | 115 | 477.154 | 0.0456 | 26.6174 | 102.04 | 0.1506 | -0.00735 |
| 74 | 12 | 130 | 477.120 | 0.0472 | 26.6148 | 105.88 | 0.1506 | -0.01056 |
| 75 | 12 | 145 | 477.092 | 0.0445 | 26.6145 | 100.00 | 0.1506 | -0.00125 |
| 76 | 12 | 200 | 477.119 | 0.0452 | 26.6128 | 101.34 | 0.1506 | -0.00663 |
| 77 | 12 | 215 | 477.099 | 0.0458 | 26.6107 | 102.89 | 0.1505 | -0.00860 |
| 78 | 12 | 230 | 477.137 | 0.0450 | 26.6090 | 100.92 | 0.1505 | -0.00681 |
| 79 | 12 | 245 | 477.140 | 0.0459 | 26.6066 | 102.78 | 0.1505 | -0.00936 |
| 80 | 12 | 300 | 477.142 | 0.0455 | 26.6060 | 101.99 | 0.1505 | -0.00260 |
| 81 | 12 | 315 | 477.124 | 0.0433 | 26.6052 | 97.12 | 0.1505 | -0.00315 |
| 82 | 12 | 330 | 477.173 | 0.0441 | 26.6034 | 98.72 | 0.1505 | -0.00727 |
| 83 | 12 | 345 | 477.160 | 0.0439 | 26.6026 | 98.30 | 0.1505 | -0.00315 |
| 84 | 12 | 400 | 477.160 | 0.0469 | 26.5966 | 104.94 | 0.1504 | -0.02386 |
| 85 | 12 | 415 | 477.096 | 0.0431 | 26.5994 | 96.71 | 0.1505 | 0.01125 |
| 86 | 12 | 430 | 477.101 | 0.0442 | 26.5973 | 99.14 | 0.1505 | -0.00836 |
| 87 | 12 | 445 | 477.114 | 0.0465 | 26.5930 | 104.39 | 0.1504 | -0.01748 |
| 88 | 12 | 500 | 477.136 | 0.0451 | 26.5934 | 100.97 | 0.1504 | 0.00191 |
| 89 | 12 | 515 | 477.094 | 0.0504 | 26.5871 | 113.19 | 0.1504 | -0.02541 |
| 90 | 12 | 530 | 477.083 | 0.0439 | 26.5926 | 98.72 | 0.1505 | 0.02188 |
| 91 | 12 | 545 | 477.092 | 0.0440 | 26.5905 | 98.75 | 0.1504 | -0.00813 |
| 92 | 12 | 600 | 477.165 | 0.0439 | 26.5896 | 98.29 | 0.1504 | -0.00381 |
| 93 | 12 | 615 | 477.196 | 0.0471 | 26.5854 | 105.23 | 0.1504 | -0.01669 |
| 94 | 12 | 630 | 477.241 | 0.0412 | 26.5883 | 91.76 | 0.1504 | 0.01176 |
| 95 | 12 | 645 | 477.249 | 0.0493 | 26.5792 | 109.77 | 0.1503 | -0.03640 |
| 96 | 12 | 700 | 477.218 | 0.0434 | 26.5841 | 96.92 | 0.1504 | 0.01931 |
| 97 | 12 | 715 | 477.290 | 0.0458 | 26.5792 | 101.93 | 0.1503 | -0.01959 |
| 98 | 12 | 730 | 477.191 | 0.0447 | 26.5793 | 99.85 | 0.1503 | 0.00060 |
| 99 | 12 | 745 | 477.153 | 0.0445 | 26.5785 | 99.70 | 0.1503 | -0.00340 |
| 100 | 12 | 800 | 477.145 | 0.0442 | 26.5763 | 98.92 | 0.1503 | -0.00854 |
| 101 | 12 | 815 | 477.189 | 0.0462 | 26.5738 | 103.29 | 0.1503 | -0.01020 |
| 102 | 12 | 830 | 477.206 | 0.0447 | 26.5743 | 99.76 | 0.1503 | 0.00217 |



DATE - 03-14-1989

ENVIRONMENT LISTING

ZONE - 3

TIME - 16:12:05

| REC
NUM | DATE | TIME | TEMP | VAPOR
PRESSURE | CORRECT.
PRESSURE | RELATIVE
HUMIDITY | AIR
DENSITY | PSIA/HR
VARIANCE |
|------------|------|------|---------|-------------------|----------------------|----------------------|----------------|---------------------|
| 103 | 12 | 845 | 477.218 | 0.0461 | 26.5709 | 102.85 | 0.1503 | -0.01363 |
| 104 | 12 | 900 | 477.175 | 0.0440 | 26.5725 | 98.34 | 0.1503 | 0.00645 |
| 105 | 12 | 915 | 477.162 | 0.0445 | 26.5715 | 99.60 | 0.1503 | -0.00414 |
| 106 | 12 | 930 | 477.188 | 0.0446 | 26.5689 | 99.76 | 0.1503 | -0.01051 |
| 107 | 12 | 945 | 477.228 | 0.0432 | 26.5698 | 96.43 | 0.1503 | 0.00362 |
| 108 | 12 | 1000 | 477.203 | 0.0444 | 26.5676 | 99.26 | 0.1503 | -0.00885 |
| 109 | 12 | 1015 | 477.265 | 0.0457 | 26.5643 | 101.74 | 0.1502 | -0.01299 |
| 110 | 12 | 1030 | 477.211 | 0.0483 | 26.5617 | 107.92 | 0.1502 | -0.01059 |
| 111 | 12 | 1045 | 477.214 | 0.0453 | 26.5637 | 101.06 | 0.1502 | 0.00826 |
| 112 | 12 | 1100 | 477.223 | 0.0455 | 26.5605 | 101.55 | 0.1502 | -0.01295 |
| 113 | 12 | 1115 | 477.229 | 0.0470 | 26.5585 | 104.81 | 0.1502 | -0.00791 |
| 114 | 12 | 1130 | 477.224 | 0.0464 | 26.5586 | 103.49 | 0.1502 | 0.00042 |
| 115 | 12 | 1145 | 477.186 | 0.0436 | 26.5584 | 97.50 | 0.1502 | -0.00093 |
| 116 | 12 | 1200 | 477.181 | 0.0440 | 26.5575 | 98.34 | 0.1502 | -0.00346 |
| 117 | 12 | 1215 | 477.221 | 0.0457 | 26.5553 | 102.03 | 0.1502 | -0.00896 |
| 118 | 12 | 1230 | 477.223 | 0.0437 | 26.5543 | 97.55 | 0.1502 | -0.00401 |
| 119 | 12 | 1245 | 477.137 | 0.0456 | 26.5524 | 102.22 | 0.1502 | -0.00760 |
| 120 | 12 | 1300 | 477.098 | 0.0448 | 26.5527 | 100.48 | 0.1502 | 0.00144 |
| 121 | 12 | 1315 | 477.076 | 0.0433 | 26.5522 | 97.24 | 0.1502 | -0.00204 |
| 122 | 12 | 1330 | 477.100 | 0.0469 | 26.5486 | 105.16 | 0.1502 | -0.01431 |
| 123 | 12 | 1345 | 477.132 | 0.0446 | 26.5504 | 100.00 | 0.1502 | 0.00691 |
| 124 | 12 | 1400 | 477.174 | 0.0447 | 26.5478 | 99.94 | 0.1502 | -0.01025 |
| 125 | 12 | 1415 | 477.172 | 0.0429 | 26.5496 | 95.86 | 0.1502 | 0.00730 |
| 126 | 12 | 1430 | 477.194 | 0.0437 | 26.5483 | 97.69 | 0.1502 | -0.00545 |
| 127 | 12 | 1445 | 477.158 | 0.0435 | 26.5460 | 97.43 | 0.1502 | -0.00922 |
| 128 | 12 | 1500 | 477.231 | 0.0474 | 26.5421 | 105.71 | 0.1501 | -0.01547 |
| 129 | 12 | 1515 | 477.232 | 0.0446 | 26.5439 | 99.44 | 0.1501 | 0.00723 |
| 130 | 12 | 1530 | 477.227 | 0.0468 | 26.5407 | 104.29 | 0.1501 | -0.01266 |
| 131 | 12 | 1545 | 477.217 | 0.0455 | 26.5410 | 101.48 | 0.1501 | 0.00112 |
| 132 | 12 | 1600 | 477.253 | 0.0453 | 26.5402 | 100.97 | 0.1501 | -0.00341 |
| 133 | 12 | 1615 | 477.264 | 0.0457 | 26.5388 | 101.69 | 0.1501 | -0.00537 |
| 134 | 12 | 1630 | 477.222 | 0.0438 | 26.5397 | 97.82 | 0.1501 | 0.00330 |
| 135 | 12 | 1645 | 477.228 | 0.0444 | 26.5391 | 98.98 | 0.1501 | -0.00212 |
| 136 | 12 | 1700 | 477.194 | 0.0445 | 26.5390 | 99.43 | 0.1501 | -0.00053 |
| 137 | 12 | 1715 | 477.214 | 0.0453 | 26.5362 | 101.00 | 0.1501 | -0.01099 |
| 138 | 12 | 1730 | 477.246 | 0.0456 | 26.5359 | 101.53 | 0.1501 | -0.00123 |
| 139 | 12 | 1745 | 477.282 | 0.0454 | 26.5361 | 100.90 | 0.1501 | 0.00081 |
| 140 | 12 | 1800 | 477.316 | 0.0449 | 26.5346 | 99.70 | 0.1500 | -0.00613 |
| 141 | 12 | 1815 | 477.327 | 0.0455 | 26.5340 | 100.98 | 0.1500 | -0.00240 |
| 142 | 12 | 1830 | 477.346 | 0.0464 | 26.5331 | 102.91 | 0.1500 | -0.00365 |
| 143 | 12 | 1845 | 477.395 | 0.0423 | 26.5347 | 93.55 | 0.1500 | 0.00647 |
| 144 | 12 | 1900 | 477.357 | 0.0447 | 26.5318 | 99.10 | 0.1500 | -0.01170 |
| 145 | 12 | 1915 | 477.389 | 0.0425 | 26.5340 | 94.03 | 0.1500 | 0.00889 |
| 146 | 12 | 1930 | 477.334 | 0.0445 | 26.5300 | 98.66 | 0.1500 | -0.01589 |
| 147 | 12 | 1945 | 477.307 | 0.0453 | 26.5292 | 100.63 | 0.1500 | -0.00331 |
| 148 | 12 | 2000 | 477.307 | 0.0438 | 26.5308 | 97.21 | 0.1500 | 0.00616 |

1. The first part of the document is a list of names and addresses of the members of the committee.

MASS LOSS

DATE - 03-14-1989

TIME - 16:13:28

| REC
NUM | TIME
DELTA
(HOURS) | CONT
AIR
MASS | MASS
LOSS
INCR | MASS
LOSS
(1 HR) | MASS
LOSS
(x 24) |
|------------|--------------------------|---------------------|----------------------|------------------------|------------------------|
| 52 | 0.00 | 162393.750 | 0.000 | 0.000 | 0.000 |
| 53 | 0.25 | 162400.875 | 7.125 | 0.000 | 0.000 |
| 54 | 0.50 | 162389.313 | -11.563 | 0.000 | 0.000 |
| 55 | 0.75 | 162397.734 | 8.422 | 0.000 | 0.000 |
| 56 | 1.00 | 162400.266 | 2.531 | -6.516 | -156.375 |
| 57 | 1.25 | 162391.938 | -8.328 | 8.938 | 214.500 |
| 58 | 1.50 | 162396.922 | 4.984 | -7.609 | -182.625 |
| 59 | 1.75 | 162405.359 | 8.438 | -7.625 | -183.000 |
| 60 | 2.00 | 162396.094 | -9.266 | 4.172 | 100.125 |
| 61 | 2.25 | 162406.219 | 10.125 | -14.281 | -342.750 |
| 62 | 2.50 | 162400.078 | -6.141 | -3.156 | -75.750 |
| 63 | 2.75 | 162389.813 | -10.266 | 15.547 | 373.125 |
| 64 | 3.00 | 162398.547 | 8.734 | -2.453 | -58.875 |
| 65 | 3.25 | 162397.016 | -1.531 | 9.203 | 220.875 |
| 66 | 3.50 | 162384.813 | -12.203 | 15.266 | 366.375 |
| 67 | 3.75 | 162394.609 | 9.797 | -4.797 | -115.125 |
| 68 | 4.00 | 162394.531 | -0.078 | 4.016 | 96.375 |
| 69 | 4.25 | 162386.422 | -8.109 | 10.594 | 254.250 |
| 70 | 4.50 | 162393.906 | 7.484 | -9.094 | -218.250 |
| 71 | 4.75 | 162400.844 | 6.938 | -6.234 | -149.625 |
| 72 | 5.00 | 162389.844 | -11.000 | 4.688 | 112.500 |
| 73 | 5.25 | 162399.766 | 9.922 | -13.344 | -320.250 |
| 74 | 5.50 | 162402.469 | 2.703 | -8.563 | -205.500 |
| 75 | 5.75 | 162399.859 | -2.609 | 0.984 | 23.625 |
| 76 | 6.00 | 162396.625 | -3.234 | -6.781 | -162.750 |
| 77 | 6.25 | 162399.469 | 2.844 | 0.297 | 7.125 |
| 78 | 6.50 | 162395.313 | -4.156 | 7.156 | 171.750 |
| 79 | 6.75 | 162395.641 | 0.328 | 4.219 | 101.250 |
| 80 | 7.00 | 162399.922 | 4.281 | -3.297 | -79.125 |
| 81 | 7.25 | 162396.078 | -3.844 | 3.391 | 81.375 |
| 82 | 7.50 | 162392.797 | -3.281 | 2.516 | 60.375 |
| 83 | 7.75 | 162394.406 | 1.609 | 1.234 | 29.625 |
| 84 | 8.00 | 162388.188 | -6.219 | 11.734 | 281.625 |
| 85 | 8.25 | 162392.219 | 4.031 | 3.859 | 92.625 |
| 86 | 8.50 | 162392.625 | 0.406 | 0.172 | 4.125 |
| 87 | 8.75 | 162387.141 | -5.484 | 7.266 | 174.375 |
| 88 | 9.00 | 162386.922 | -0.219 | 1.266 | 30.375 |
| 89 | 9.25 | 162386.719 | -0.203 | 5.500 | 132.000 |
| 90 | 9.50 | 162397.828 | 11.109 | -5.203 | -124.875 |
| 91 | 9.75 | 162393.953 | -3.875 | -6.813 | -163.500 |
| 92 | 10.00 | 162394.797 | 0.844 | -7.875 | -189.000 |
| 93 | 10.25 | 162390.688 | -4.109 | -3.969 | -95.250 |
| 94 | 10.50 | 162389.203 | -1.484 | 8.625 | 207.000 |
| 95 | 10.75 | 162381.109 | -8.094 | 12.844 | 308.250 |
| 96 | 11.00 | 162393.500 | 12.391 | 1.297 | 31.125 |
| 97 | 11.25 | 162376.625 | -16.875 | 14.063 | 337.500 |
| 98 | 11.50 | 162388.984 | 12.359 | 0.219 | 5.250 |
| 99 | 11.75 | 162392.703 | 3.719 | -11.594 | -278.250 |
| 100 | 12.00 | 162382.406 | -10.297 | 11.094 | 266.250 |
| 101 | 12.25 | 162386.531 | 4.125 | -9.906 | -237.750 |

400

3

[illegible]

20

MASS LOSS

DATE - 03-14-1989

TIME - 16:13:33

| REC
NUM | TIME
DELTA
(HOURS) | CONT
AIR
MASS | MASS
LOSS
INCR | MASS
LOSS
(1 HR) | MASS
LOSS
(x 24) |
|------------|--------------------------|---------------------|----------------------|------------------------|------------------------|
| 102 | 12.50 | 162383.984 | -2.547 | 5.000 | 120.000 |
| 103 | 12.75 | 162377.516 | -6.469 | 15.188 | 364.500 |
| 104 | 13.00 | 162383.984 | 6.469 | -1.578 | -37.875 |
| 105 | 13.25 | 162388.953 | 4.969 | -2.422 | -58.125 |
| 106 | 13.50 | 162385.781 | -3.172 | -1.797 | -43.125 |
| 107 | 13.75 | 162380.953 | -4.828 | -3.438 | -82.500 |
| 108 | 14.00 | 162389.984 | 9.031 | -6.000 | -144.000 |
| 109 | 14.25 | 162377.391 | -12.594 | 11.563 | 277.500 |
| 110 | 14.50 | 162380.156 | 2.766 | 5.625 | 135.000 |
| 111 | 14.75 | 162388.875 | 8.719 | -7.922 | -190.125 |
| 112 | 15.00 | 162372.125 | -16.750 | 17.859 | 428.625 |
| 113 | 15.25 | 162375.672 | 3.547 | 1.719 | 41.250 |
| 114 | 15.50 | 162382.359 | 6.688 | -2.203 | -52.875 |
| 115 | 15.75 | 162372.781 | -9.578 | 16.094 | 386.250 |
| 116 | 16.00 | 162377.266 | 4.484 | -5.141 | -123.375 |
| 117 | 16.25 | 162375.250 | -2.016 | 0.422 | 10.125 |
| 118 | 16.50 | 162371.516 | -3.734 | 10.844 | 260.250 |
| 119 | 16.75 | 162380.266 | 8.750 | -7.484 | -179.625 |
| 120 | 17.00 | 162381.688 | 1.422 | -4.422 | -106.125 |
| 121 | 17.25 | 162384.125 | 2.438 | -8.875 | -213.000 |
| 122 | 17.50 | 162382.563 | -1.563 | -11.047 | -265.125 |
| 123 | 17.75 | 162392.500 | 9.938 | -12.234 | -293.625 |
| 124 | 18.00 | 162380.750 | -11.750 | 0.938 | 22.500 |
| 125 | 18.25 | 162386.828 | 6.078 | -2.703 | -64.875 |
| 126 | 18.50 | 162384.672 | -2.156 | -2.109 | -50.625 |
| 127 | 18.75 | 162399.281 | 14.609 | -6.781 | -162.750 |
| 128 | 19.00 | 162372.391 | -26.891 | 8.359 | 200.625 |
| 129 | 19.25 | 162379.703 | 7.313 | 7.125 | 171.000 |
| 130 | 19.50 | 162376.750 | -2.953 | 7.922 | 190.125 |
| 131 | 19.75 | 162377.125 | 0.375 | 22.156 | 531.750 |
| 132 | 20.00 | 162376.750 | -0.375 | -4.359 | -104.625 |
| 133 | 20.25 | 162379.063 | 2.313 | 0.641 | 15.375 |
| 134 | 20.50 | 162382.359 | 3.297 | -5.609 | -134.625 |
| 135 | 20.75 | 162384.391 | 2.031 | -7.266 | -174.375 |
| 136 | 21.00 | 162391.500 | 7.109 | -14.750 | -354.000 |
| 137 | 21.25 | 162381.453 | -10.047 | -2.391 | -57.375 |
| 138 | 21.50 | 162385.344 | 3.891 | -2.984 | -71.625 |
| 139 | 21.75 | 162387.625 | 2.281 | -3.234 | -77.625 |
| 140 | 22.00 | 162376.844 | -10.781 | 14.656 | 351.750 |
| 141 | 22.25 | 162383.000 | 6.156 | -1.547 | -37.125 |
| 142 | 22.50 | 162382.297 | -0.703 | 3.047 | 73.125 |
| 143 | 22.75 | 162374.031 | -8.266 | 13.594 | 326.250 |
| 144 | 23.00 | 162381.781 | 7.750 | -4.938 | -118.500 |
| 145 | 23.25 | 162386.266 | 4.484 | -3.266 | -78.375 |
| 146 | 23.50 | 162375.031 | -11.234 | 7.266 | 174.375 |
| 147 | 23.75 | 162376.891 | 1.859 | -2.859 | -68.625 |
| 148 | 24.00 | 162380.484 | 3.594 | 1.297 | 31.125 |

APPENDIX D
TYPE A CALCULATIONS

Mass Point Analysis
Total Time Analysis

[illegible]

MASS POINT

DATE - 03-14-1989

TIME - 16:17:10

| TIME | TEMP | VAPOR
PRESS | DEW
POINT | CORR.
AIR
PRESS | CONT
AIR
MASS | LSF
LEAK
RATE | UPPER
CONF
LEVEL |
|------|---------|----------------|--------------|-----------------------|---------------------|---------------------|------------------------|
| 2000 | 521.104 | 0.0881 | 31.893 | 26.619 | 1.00000000 | 0.00000 | 0.00000 |
| 2015 | 521.043 | 0.0871 | 31.630 | 26.617 | 1.00004387 | 0.00000 | 0.00000 |
| 2030 | 520.993 | 0.0872 | 31.648 | 26.612 | 0.99997264 | 0.13132 | 0.00000 |
| 2045 | 520.938 | 0.0860 | 31.362 | 26.611 | 1.00002456 | -0.00235 | 0.47483 |
| 2100 | 520.885 | 0.0857 | 31.272 | 26.609 | 1.00004005 | -0.05836 | 0.17489 |
| 2115 | 520.855 | 0.0852 | 31.149 | 26.606 | 0.99998885 | 0.00419 | 0.16243 |
| 2130 | 520.815 | 0.0844 | 30.955 | 26.605 | 1.00001955 | -0.00550 | 0.10086 |
| 2145 | 520.754 | 0.0840 | 30.842 | 26.603 | 1.00007153 | -0.05065 | 0.04106 |
| 2200 | 520.703 | 0.0841 | 30.875 | 26.599 | 1.00001442 | -0.03180 | 0.04046 |
| 2215 | 520.662 | 0.0827 | 30.501 | 26.598 | 1.00007677 | -0.05312 | 0.00792 |
| 2230 | 520.644 | 0.0831 | 30.604 | 26.596 | 1.00003898 | -0.04584 | 0.00388 |
| 2245 | 520.600 | 0.0824 | 30.428 | 26.592 | 0.99997574 | -0.01653 | 0.03460 |
| 2300 | 520.562 | 0.0820 | 30.323 | 26.592 | 1.00002956 | -0.01530 | 0.02753 |
| 2315 | 520.539 | 0.0818 | 30.257 | 26.590 | 1.00002015 | -0.01151 | 0.02510 |
| 2330 | 520.507 | 0.0814 | 30.161 | 26.587 | 0.99994493 | 0.00929 | 0.04731 |
| 2345 | 520.451 | 0.0810 | 30.066 | 26.586 | 1.00000536 | 0.01021 | 0.04329 |
| 0 | 520.417 | 0.0809 | 30.040 | 26.584 | 1.00000477 | 0.01075 | 0.03979 |
| 15 | 520.377 | 0.0803 | 29.870 | 26.580 | 0.99995494 | 0.01933 | 0.04645 |
| 30 | 520.334 | 0.0798 | 29.718 | 26.579 | 1.00000095 | 0.01820 | 0.04239 |
| 45 | 520.297 | 0.0791 | 29.533 | 26.579 | 1.00004363 | 0.01126 | 0.03404 |
| 100 | 520.264 | 0.0788 | 29.463 | 26.575 | 0.99997592 | 0.01442 | 0.03520 |
| 115 | 520.221 | 0.0789 | 29.475 | 26.575 | 1.00003695 | 0.00967 | 0.02910 |
| 130 | 520.191 | 0.0786 | 29.408 | 26.574 | 1.00005364 | 0.00421 | 0.02272 |
| 145 | 520.155 | 0.0779 | 29.203 | 26.571 | 1.00003755 | 0.00151 | 0.01865 |
| 200 | 520.150 | 0.0777 | 29.153 | 26.570 | 1.00001776 | 0.00115 | 0.01689 |
| 215 | 520.112 | 0.0778 | 29.182 | 26.569 | 1.00003517 | -0.00057 | 0.01403 |
| 230 | 520.085 | 0.0771 | 28.987 | 26.567 | 1.00000966 | 0.00001 | 0.01351 |
| 245 | 520.059 | 0.0771 | 28.997 | 26.566 | 1.00001156 | 0.00034 | 0.01286 |
| 300 | 520.034 | 0.0767 | 28.885 | 26.565 | 1.00003803 | -0.00115 | 0.01059 |
| 315 | 520.004 | 0.0759 | 28.653 | 26.563 | 1.00001431 | -0.00089 | 0.01006 |
| 330 | 519.980 | 0.0759 | 28.654 | 26.561 | 0.99999416 | 0.00051 | 0.01082 |
| 345 | 519.958 | 0.0758 | 28.622 | 26.560 | 1.00000405 | 0.00111 | 0.01079 |
| 400 | 519.927 | 0.0761 | 28.717 | 26.558 | 0.99996579 | 0.00357 | 0.01297 |
| 415 | 519.899 | 0.0752 | 28.437 | 26.557 | 0.99999058 | 0.00441 | 0.01328 |
| 430 | 519.877 | 0.0752 | 28.458 | 26.556 | 0.99999309 | 0.00497 | 0.01334 |
| 445 | 519.859 | 0.0755 | 28.521 | 26.554 | 0.99995923 | 0.00688 | 0.01500 |
| 500 | 519.839 | 0.0751 | 28.420 | 26.553 | 0.99995792 | 0.00853 | 0.01637 |
| 515 | 519.813 | 0.0758 | 28.612 | 26.552 | 0.99995667 | 0.00994 | 0.01749 |
| 530 | 519.787 | 0.0743 | 28.185 | 26.552 | 1.00002503 | 0.00859 | 0.01586 |
| 545 | 519.759 | 0.0740 | 28.116 | 26.550 | 1.00000119 | 0.00823 | 0.01515 |
| 600 | 519.749 | 0.0741 | 28.134 | 26.550 | 1.00000644 | 0.00772 | 0.01431 |
| 615 | 519.734 | 0.0746 | 28.270 | 26.548 | 0.99998111 | 0.00806 | 0.01435 |
| 630 | 519.715 | 0.0729 | 27.790 | 26.547 | 0.99997205 | 0.00861 | 0.01462 |
| 645 | 519.693 | 0.0747 | 28.293 | 26.545 | 0.99992210 | 0.01051 | 0.01653 |
| 700 | 519.671 | 0.0732 | 27.874 | 26.545 | 0.99999839 | 0.01001 | 0.01579 |
| 715 | 519.655 | 0.0736 | 27.973 | 26.542 | 0.99989456 | 0.01232 | 0.01828 |
| 730 | 519.610 | 0.0731 | 27.848 | 26.542 | 0.99997067 | 0.01237 | 0.01807 |
| 745 | 519.585 | 0.0728 | 27.741 | 26.541 | 0.99999350 | 0.01182 | 0.01730 |
| 800 | 519.571 | 0.0728 | 27.758 | 26.539 | 0.99993020 | 0.01279 | 0.01814 |



11/11/11 11:11:11 11/11/11 11:11:11

11/11/11 11:11:11 11/11/11 11:11:11

MASS POINT

DATE - 03-14-1989

TIME - 16:17:19

| TIME | TEMP | VAPOR
PRESS | DEW
POINT | CORR.
AIR
PRESS | CONT
AIR
MASS | LSF
LEAK
RATE | UPPER
CONF
LEVEL |
|------|---------|----------------|--------------|-----------------------|---------------------|---------------------|------------------------|
| 815 | 519.547 | 0.0727 | 27.729 | 26.538 | 0.99995553 | 0.01305 | 0.01819 |
| 830 | 519.542 | 0.0724 | 27.635 | 26.537 | 0.99993986 | 0.01360 | 0.01855 |
| 845 | 519.521 | 0.0725 | 27.671 | 26.535 | 0.99990010 | 0.01488 | 0.01980 |
| 900 | 519.500 | 0.0722 | 27.576 | 26.535 | 0.99993992 | 0.01519 | 0.01994 |
| 915 | 519.475 | 0.0720 | 27.523 | 26.535 | 0.99997038 | 0.01484 | 0.01943 |
| 930 | 519.439 | 0.0720 | 27.516 | 26.532 | 0.99995095 | 0.01487 | 0.01929 |
| 945 | 519.464 | 0.0714 | 27.342 | 26.533 | 0.99992114 | 0.01541 | 0.01969 |
| 1000 | 519.422 | 0.0714 | 27.335 | 26.532 | 0.99997675 | 0.01489 | 0.01905 |
| 1015 | 519.412 | 0.0717 | 27.414 | 26.530 | 0.99989927 | 0.01570 | 0.01980 |
| 1030 | 519.393 | 0.0719 | 27.490 | 26.529 | 0.99991626 | 0.01613 | 0.02011 |
| 1045 | 519.369 | 0.0713 | 27.308 | 26.529 | 0.99997002 | 0.01565 | 0.01952 |
| 1100 | 519.350 | 0.0714 | 27.335 | 26.526 | 0.99986690 | 0.01675 | 0.02065 |
| 1115 | 519.330 | 0.0716 | 27.379 | 26.525 | 0.99988872 | 0.01741 | 0.02123 |
| 1130 | 519.308 | 0.0711 | 27.230 | 26.525 | 0.99992985 | 0.01739 | 0.02109 |
| 1145 | 519.293 | 0.0704 | 27.022 | 26.523 | 0.99987084 | 0.01817 | 0.02182 |
| 1200 | 519.268 | 0.0704 | 27.035 | 26.522 | 0.99989849 | 0.01848 | 0.02203 |
| 1215 | 519.258 | 0.0708 | 27.149 | 26.521 | 0.99988610 | 0.01889 | 0.02237 |
| 1230 | 519.228 | 0.0704 | 27.020 | 26.519 | 0.99986303 | 0.01954 | 0.02297 |
| 1245 | 519.196 | 0.0706 | 27.085 | 26.519 | 0.99991691 | 0.01945 | 0.02277 |
| 1300 | 519.186 | 0.0700 | 26.912 | 26.519 | 0.99992573 | 0.01924 | 0.02247 |
| 1315 | 519.149 | 0.0695 | 26.766 | 26.517 | 0.99994075 | 0.01884 | 0.02201 |
| 1330 | 519.139 | 0.0701 | 26.950 | 26.517 | 0.99993110 | 0.01857 | 0.02165 |
| 1345 | 519.117 | 0.0696 | 26.778 | 26.517 | 0.99999225 | 0.01762 | 0.02076 |
| 1400 | 519.115 | 0.0695 | 26.765 | 26.515 | 0.99991995 | 0.01751 | 0.02055 |
| 1415 | 519.088 | 0.0691 | 26.627 | 26.515 | 0.99995732 | 0.01699 | 0.02000 |
| 1430 | 519.090 | 0.0693 | 26.680 | 26.514 | 0.99994409 | 0.01663 | 0.01958 |
| 1445 | 519.062 | 0.0692 | 26.662 | 26.515 | 1.00003409 | 0.01540 | 0.01850 |
| 1500 | 519.063 | 0.0697 | 26.822 | 26.511 | 0.99986845 | 0.01583 | 0.01888 |
| 1515 | 519.047 | 0.0692 | 26.660 | 26.511 | 0.99991351 | 0.01579 | 0.01877 |
| 1530 | 519.033 | 0.0693 | 26.682 | 26.510 | 0.99989533 | 0.01591 | 0.01881 |
| 1545 | 519.017 | 0.0684 | 26.417 | 26.509 | 0.99989760 | 0.01598 | 0.01881 |
| 1600 | 519.011 | 0.0685 | 26.451 | 26.509 | 0.99989533 | 0.01606 | 0.01882 |
| 1615 | 518.998 | 0.0678 | 26.224 | 26.509 | 0.99990958 | 0.01599 | 0.01868 |
| 1630 | 518.974 | 0.0675 | 26.120 | 26.508 | 0.99992985 | 0.01575 | 0.01839 |
| 1645 | 518.960 | 0.0676 | 26.158 | 26.508 | 0.99994236 | 0.01541 | 0.01800 |
| 1700 | 518.935 | 0.0675 | 26.142 | 26.508 | 0.99998605 | 0.01473 | 0.01735 |
| 1715 | 518.931 | 0.0675 | 26.142 | 26.506 | 0.99992424 | 0.01457 | 0.01713 |
| 1730 | 518.912 | 0.0677 | 26.199 | 26.505 | 0.99994820 | 0.01423 | 0.01675 |
| 1745 | 518.907 | 0.0676 | 26.169 | 26.506 | 0.99996227 | 0.01379 | 0.01629 |
| 1800 | 518.902 | 0.0675 | 26.123 | 26.503 | 0.99989587 | 0.01385 | 0.01629 |
| 1815 | 518.881 | 0.0674 | 26.096 | 26.503 | 0.99993378 | 0.01363 | 0.01603 |
| 1830 | 518.878 | 0.0677 | 26.184 | 26.503 | 0.99992949 | 0.01344 | 0.01580 |
| 1845 | 518.874 | 0.0671 | 26.020 | 26.502 | 0.99987859 | 0.01360 | 0.01591 |
| 1900 | 518.845 | 0.0673 | 26.065 | 26.501 | 0.99992627 | 0.01343 | 0.01569 |
| 1915 | 518.839 | 0.0668 | 25.894 | 26.502 | 0.99995393 | 0.01308 | 0.01531 |
| 1930 | 518.822 | 0.0671 | 26.018 | 26.499 | 0.99988478 | 0.01317 | 0.01537 |
| 1945 | 518.806 | 0.0672 | 26.049 | 26.499 | 0.99989623 | 0.01319 | 0.01533 |
| 2000 | 518.804 | 0.0667 | 25.886 | 26.499 | 0.99991834 | 0.01306 | 0.01516 |

MAX ALLOWABLE LEAK RATE : .25

75% OF MAX ALLOWABLE LEAK RATE

.1875

EPRI EQUATION #6 IS SATISFIED.

EPRI EQUATION #7 IS SATISFIED

4

4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

101

102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200

201

DATE - 03-14-1989

TOTAL TIME CALCULATION RESULTS

TIME - 16:20:53

| TIME | TEMP | VAPOR
PRESS | DEW
POINT | CORR.
AIR
PRESS | LSF
LEAK
RATE | UPPER
CONF
LEVEL | MEASURED
LEAK
RATE |
|------|---------|----------------|--------------|-----------------------|---------------------|------------------------|--------------------------|
| 2000 | 521.104 | 0.0881 | 31.893 | 26.619 | 0.0000 | 0.00000 | 0.00000 |
| 2015 | 521.043 | 0.0871 | 31.630 | 26.617 | 0.0000 | 0.00000 | -0.42058 |
| 2030 | 520.993 | 0.0872 | 31.648 | 26.612 | 0.1316 | 0.00000 | 0.13157 |
| 2045 | 520.938 | 0.0860 | 31.362 | 26.611 | 0.0487 | 2.67307 | -0.07829 |
| 2100 | 520.885 | 0.0857 | 31.272 | 26.609 | -0.0014 | 0.63991 | -0.09622 |
| 2115 | 520.855 | 0.0852 | 31.149 | 26.606 | 0.0429 | 0.42010 | 0.02148 |
| 2130 | 520.815 | 0.0844 | 30.955 | 26.605 | 0.0353 | 0.32563 | -0.03118 |
| 2145 | 520.754 | 0.0840 | 30.842 | 26.603 | -0.0021 | 0.24622 | -0.09795 |
| 2200 | 520.703 | 0.0841 | 30.875 | 26.599 | 0.0071 | 0.20928 | -0.01723 |
| 2215 | 520.662 | 0.0827 | 30.501 | 26.598 | -0.0122 | 0.16821 | -0.08186 |
| 2230 | 520.644 | 0.0831 | 30.604 | 26.596 | -0.0107 | 0.14624 | -0.03738 |
| 2245 | 520.600 | 0.0824 | 30.428 | 26.592 | 0.0086 | 0.14841 | 0.02123 |
| 2300 | 520.562 | 0.0820 | 30.323 | 26.592 | 0.0091 | 0.13629 | -0.02362 |
| 2315 | 520.539 | 0.0818 | 30.257 | 26.590 | 0.0115 | 0.12771 | -0.01483 |
| 2330 | 520.507 | 0.0814 | 30.161 | 26.587 | 0.0266 | 0.13329 | 0.03777 |
| 2345 | 520.451 | 0.0810 | 30.066 | 26.586 | 0.0282 | 0.12756 | -0.00337 |
| 0 | 520.417 | 0.0809 | 30.040 | 26.584 | 0.0293 | 0.12216 | -0.00289 |
| 15 | 520.377 | 0.0803 | 29.870 | 26.580 | 0.0361 | 0.12273 | 0.02548 |
| 30 | 520.334 | 0.0798 | 29.718 | 26.579 | 0.0361 | 0.11818 | -0.00049 |
| 45 | 520.297 | 0.0791 | 29.533 | 26.579 | 0.0317 | 0.11025 | -0.02205 |
| 100 | 520.264 | 0.0788 | 29.463 | 26.575 | 0.0341 | 0.10806 | 0.01157 |
| 115 | 520.221 | 0.0789 | 29.475 | 26.575 | 0.0309 | 0.10202 | -0.01690 |
| 130 | 520.191 | 0.0786 | 29.408 | 26.574 | 0.0270 | 0.09525 | -0.02342 |
| 145 | 520.155 | 0.0779 | 29.203 | 26.571 | 0.0248 | 0.09007 | -0.01568 |
| 200 | 520.150 | 0.0777 | 29.153 | 26.570 | 0.0242 | 0.08662 | -0.00707 |
| 215 | 520.112 | 0.0778 | 29.182 | 26.569 | 0.0226 | 0.08266 | -0.01351 |
| 230 | 520.085 | 0.0771 | 28.987 | 26.567 | 0.0225 | 0.08021 | -0.00355 |
| 245 | 520.059 | 0.0771 | 28.997 | 26.566 | 0.0223 | 0.07790 | -0.00412 |
| 300 | 520.034 | 0.0767 | 28.885 | 26.565 | 0.0209 | 0.07464 | -0.01303 |
| 315 | 520.004 | 0.0759 | 28.653 | 26.563 | 0.0207 | 0.07250 | -0.00473 |
| 330 | 519.980 | 0.0759 | 28.654 | 26.561 | 0.0213 | 0.07129 | 0.00188 |
| 345 | 519.958 | 0.0758 | 28.622 | 26.560 | 0.0214 | 0.06978 | -0.00123 |
| 400 | 519.927 | 0.0761 | 28.717 | 26.558 | 0.0228 | 0.06959 | 0.01028 |
| 415 | 519.899 | 0.0752 | 28.437 | 26.557 | 0.0231 | 0.06855 | 0.00275 |
| 430 | 519.877 | 0.0752 | 28.458 | 26.556 | 0.0233 | 0.06741 | 0.00196 |
| 445 | 519.859 | 0.0755 | 28.521 | 26.554 | 0.0245 | 0.06724 | 0.01118 |
| 500 | 519.839 | 0.0751 | 28.420 | 26.553 | 0.0255 | 0.06704 | 0.01123 |
| 515 | 519.813 | 0.0758 | 28.612 | 26.552 | 0.0263 | 0.06678 | 0.01124 |
| 530 | 519.787 | 0.0743 | 28.185 | 26.552 | 0.0253 | 0.06487 | -0.00634 |
| 545 | 519.759 | 0.0740 | 28.116 | 26.550 | 0.0250 | 0.06350 | -0.00030 |
| 600 | 519.749 | 0.0741 | 28.134 | 26.550 | 0.0245 | 0.06211 | -0.00155 |
| 615 | 519.734 | 0.0746 | 28.270 | 26.548 | 0.0246 | 0.06129 | 0.00443 |
| 630 | 519.715 | 0.0729 | 27.790 | 26.547 | 0.0249 | 0.06068 | 0.00640 |
| 645 | 519.693 | 0.0747 | 28.293 | 26.545 | 0.0261 | 0.06100 | 0.01739 |
| 700 | 519.671 | 0.0732 | 27.874 | 26.545 | 0.0257 | 0.05989 | 0.00035 |
| 715 | 519.655 | 0.0736 | 27.973 | 26.542 | 0.0272 | 0.06056 | 0.02250 |
| 730 | 519.610 | 0.0731 | 27.848 | 26.542 | 0.0272 | 0.05988 | 0.00613 |
| 745 | 519.585 | 0.0728 | 27.741 | 26.541 | 0.0268 | 0.05882 | 0.00133 |
| 800 | 519.571 | 0.0728 | 27.758 | 26.539 | 0.0274 | 0.05873 | 0.01397 |



DATE - 03-14-1989

TOTAL TIME CALCULATION RESULTS

TIME - 16:20:58

| TIME | TEMP | VAPOR
PRESS | DEW
POINT | CORR.
AIR
PRESS | LSF
LEAK
RATE | UPPER
CONF
LEVEL | MEASURED
LEAK
RATE |
|------|---------|----------------|--------------|-----------------------|---------------------|------------------------|--------------------------|
| 815 | 519.547 | 0.0727 | 27.729 | 26.538 | 0.0275 | 0.05826 | 0.00872 |
| 830 | 519.542 | 0.0724 | 27.635 | 26.537 | 0.0279 | 0.05797 | 0.01156 |
| 845 | 519.521 | 0.0725 | 27.671 | 26.535 | 0.0287 | 0.05821 | 0.01882 |
| 900 | 519.500 | 0.0722 | 27.576 | 26.535 | 0.0289 | 0.05787 | 0.01110 |
| 915 | 519.475 | 0.0720 | 27.523 | 26.535 | 0.0287 | 0.05713 | 0.00536 |
| 930 | 519.439 | 0.0720 | 27.516 | 26.532 | 0.0287 | 0.05660 | 0.00873 |
| 945 | 519.464 | 0.0714 | 27.342 | 26.533 | 0.0290 | 0.05643 | 0.01377 |
| 1000 | 519.422 | 0.0714 | 27.335 | 26.532 | 0.0286 | 0.05563 | 0.00399 |
| 1015 | 519.412 | 0.0717 | 27.414 | 26.530 | 0.0292 | 0.05565 | 0.01697 |
| 1030 | 519.393 | 0.0719 | 27.490 | 26.529 | 0.0294 | 0.05548 | 0.01386 |
| 1045 | 519.369 | 0.0713 | 27.308 | 26.529 | 0.0291 | 0.05475 | 0.00489 |
| 1100 | 519.350 | 0.0714 | 27.335 | 26.526 | 0.0298 | 0.05502 | 0.02130 |
| 1115 | 519.330 | 0.0716 | 27.379 | 26.525 | 0.0303 | 0.05505 | 0.01752 |
| 1130 | 519.308 | 0.0711 | 27.230 | 26.525 | 0.0302 | 0.05466 | 0.01086 |
| 1145 | 519.293 | 0.0704 | 27.022 | 26.523 | 0.0308 | 0.05478 | 0.01968 |
| 1200 | 519.268 | 0.0704 | 27.035 | 26.522 | 0.0310 | 0.05464 | 0.01523 |
| 1215 | 519.258 | 0.0708 | 27.149 | 26.521 | 0.0313 | 0.05457 | 0.01683 |
| 1230 | 519.228 | 0.0704 | 27.020 | 26.519 | 0.0317 | 0.05466 | 0.01992 |
| 1245 | 519.196 | 0.0706 | 27.085 | 26.519 | 0.0317 | 0.05430 | 0.01191 |
| 1300 | 519.186 | 0.0700 | 26.912 | 26.519 | 0.0315 | 0.05385 | 0.01049 |
| 1315 | 519.149 | 0.0695 | 26.766 | 26.517 | 0.0313 | 0.05329 | 0.00825 |
| 1330 | 519.139 | 0.0701 | 26.950 | 26.517 | 0.0311 | 0.05280 | 0.00945 |
| 1345 | 519.117 | 0.0696 | 26.778 | 26.517 | 0.0304 | 0.05190 | 0.00104 |
| 1400 | 519.115 | 0.0695 | 26.765 | 26.515 | 0.0303 | 0.05149 | 0.01068 |
| 1415 | 519.088 | 0.0691 | 26.627 | 26.515 | 0.0299 | 0.05086 | 0.00561 |
| 1430 | 519.090 | 0.0693 | 26.680 | 26.514 | 0.0297 | 0.05031 | 0.00726 |
| 1445 | 519.062 | 0.0692 | 26.662 | 26.515 | 0.0288 | 0.04924 | -0.00436 |
| 1500 | 519.063 | 0.0697 | 26.822 | 26.511 | 0.0290 | 0.04916 | 0.01662 |
| 1515 | 519.047 | 0.0692 | 26.660 | 26.511 | 0.0289 | 0.04884 | 0.01079 |
| 1530 | 519.033 | 0.0693 | 26.682 | 26.510 | 0.0290 | 0.04862 | 0.01289 |
| 1545 | 519.017 | 0.0684 | 26.417 | 26.509 | 0.0290 | 0.04838 | 0.01245 |
| 1600 | 519.011 | 0.0685 | 26.451 | 26.509 | 0.0290 | 0.04814 | 0.01256 |
| 1615 | 518.998 | 0.0678 | 26.224 | 26.509 | 0.0289 | 0.04783 | 0.01072 |
| 1630 | 518.974 | 0.0675 | 26.120 | 26.508 | 0.0286 | 0.04740 | 0.00822 |
| 1645 | 518.960 | 0.0676 | 26.158 | 26.508 | 0.0284 | 0.04691 | 0.00667 |
| 1700 | 518.935 | 0.0675 | 26.142 | 26.508 | 0.0278 | 0.04621 | 0.00159 |
| 1715 | 518.931 | 0.0675 | 26.142 | 26.506 | 0.0277 | 0.04582 | 0.00856 |
| 1730 | 518.912 | 0.0677 | 26.199 | 26.505 | 0.0274 | 0.04533 | 0.00578 |
| 1745 | 518.907 | 0.0676 | 26.169 | 26.506 | 0.0270 | 0.04478 | 0.00416 |
| 1800 | 518.902 | 0.0675 | 26.123 | 26.503 | 0.0270 | 0.04454 | 0.01136 |
| 1815 | 518.881 | 0.0674 | 26.096 | 26.503 | 0.0267 | 0.04414 | 0.00715 |
| 1830 | 518.878 | 0.0677 | 26.184 | 26.503 | 0.0265 | 0.04375 | 0.00752 |
| 1845 | 518.874 | 0.0671 | 26.020 | 26.502 | 0.0266 | 0.04359 | 0.01281 |
| 1900 | 518.845 | 0.0673 | 26.065 | 26.501 | 0.0264 | 0.04324 | 0.00770 |
| 1915 | 518.839 | 0.0668 | 25.894 | 26.502 | 0.0261 | 0.04276 | 0.00476 |
| 1930 | 518.822 | 0.0671 | 26.018 | 26.499 | 0.0261 | 0.04257 | 0.01177 |
| 1945 | 518.806 | 0.0672 | 26.049 | 26.499 | 0.0260 | 0.04234 | 0.01049 |
| 2000 | 518.804 | 0.0667 | 25.886 | 26.499 | 0.0258 | 0.04202 | 0.00817 |

MEASURED LEAK RATE USING TOTAL TIME: 0.025839

THE MEAN TOTAL TIME RATE OF 0.009229
IS LESS THAN ALLOWABLE MAXIMUM RATE OF .25

APPENDIX E
VERIFICATION TEST CALCULATIONS

Mass Point Analysis
Total Time Leakage Rate vs Time

54

100

100

100

100

100

DATE - 03-14-1989

MASS POINT WITH VERIFICATION TEST

TIME - 16:26:33

| TIME | MASS | MASS POINT | | SCFM | VERIFICATION | |
|------|----------|------------|---------------|-------|--------------|------------|
| | | GROSS LSF | GROSS 95% UCL | | NET LSF | NET 95 UCL |
| 2015 | 162370.0 | 0.0000 | 0.0000 | 0.000 | 0.0000 | 0.0000 |
| 2030 | 162368.9 | 0.0000 | 0.0000 | 4.110 | -0.2740 | -0.2740 |
| 2045 | 162370.5 | -0.0120 | 0.0000 | 4.154 | -0.2889 | -0.2769 |
| 2100 | 162358.2 | 0.2002 | 0.5658 | 3.860 | -0.0571 | 0.3085 |
| 2115 | 162362.5 | 0.1520 | 0.3332 | 4.083 | -0.1202 | 0.0610 |
| 2130 | 162363.7 | 0.1065 | 0.2276 | 4.108 | -0.1674 | -0.0462 |
| 2145 | 162345.3 | 0.1955 | 0.3269 | 3.921 | -0.0659 | 0.0655 |
| 2200 | 162350.5 | 0.1908 | 0.2854 | 3.983 | -0.0748 | 0.0198 |
| 2215 | 162349.7 | 0.1787 | 0.2514 | 4.029 | -0.0899 | -0.0172 |
| 2230 | 162328.2 | 0.2324 | 0.3134 | 4.171 | -0.0457 | 0.0352 |
| 2245 | 162329.1 | 0.2486 | 0.3159 | 4.098 | -0.0247 | 0.0427 |
| 2300 | 162326.4 | 0.2544 | 0.3102 | 3.870 | -0.0036 | 0.0522 |
| 2315 | 162315.4 | 0.2710 | 0.3208 | 3.878 | 0.0124 | 0.0622 |
| 2330 | 162315.9 | 0.2729 | 0.3152 | 3.887 | 0.0137 | 0.0560 |
| 2345 | 162315.0 | 0.2686 | 0.3053 | 3.947 | 0.0054 | 0.0421 |
| 0 | 162303.5 | 0.2749 | 0.3074 | 4.059 | 0.0042 | 0.0367 |
| 15 | 162306.4 | 0.2702 | 0.2991 | 3.851 | 0.0134 | 0.0423 |

(Lo + Lam - .25 La) <= Lc <= (Lo + Lam + .25 La)
0.2074 <= 0.2702 <= 0.3324

DATE - 03-14-1989

TOTAL TIME WITH VERIFICATION TEST

TIME - 16:28:22

| TIME | MASS | TOTAL TIME | | SCFM | VERIFICATION | |
|------|--------|--------------|------------------|-------|--------------|----------------|
| | | GROSS
LSF | GROSS
95% UCL | | NET
LSF | NET
95% UCL |
| 2030 | 162369 | 0.0000 | 0.0000 | 4.110 | -0.2740 | -0.2740 |
| 2045 | 162370 | -0.0122 | 0.0000 | 4.154 | -0.2891 | -0.2769 |
| 2100 | 162358 | 0.1786 | 1.3001 | 3.860 | -0.0787 | 1.0428 |
| 2115 | 162363 | 0.1563 | 0.4390 | 4.083 | -0.1159 | 0.1668 |
| 2130 | 162364 | 0.1225 | 0.3116 | 4.108 | -0.1514 | 0.0378 |
| 2145 | 162345 | 0.1926 | 0.3433 | 3.921 | -0.0688 | 0.0819 |
| 2200 | 162350 | 0.1956 | 0.3155 | 3.983 | -0.0700 | 0.0499 |
| 2215 | 162350 | 0.1901 | 0.2945 | 4.029 | -0.0785 | 0.0259 |
| 2230 | 162328 | 0.2330 | 0.3259 | 4.171 | -0.0451 | 0.0478 |
| 2245 | 162329 | 0.2504 | 0.3306 | 4.098 | -0.0228 | 0.0573 |
| 2300 | 162326 | 0.2598 | 0.3325 | 3.870 | 0.0017 | 0.0744 |
| 2315 | 162315 | 0.2762 | 0.3415 | 3.878 | 0.0176 | 0.0829 |
| 2330 | 162316 | 0.2818 | 0.3433 | 3.887 | 0.0226 | 0.0841 |
| 2345 | 162315 | 0.2820 | 0.3413 | 3.947 | 0.0188 | 0.0780 |
| 0 | 162303 | 0.2891 | 0.3435 | 4.059 | 0.0184 | 0.0727 |
| 15 | 162306 | 0.2883 | 0.3419 | 3.851 | 0.0315 | 0.0851 |

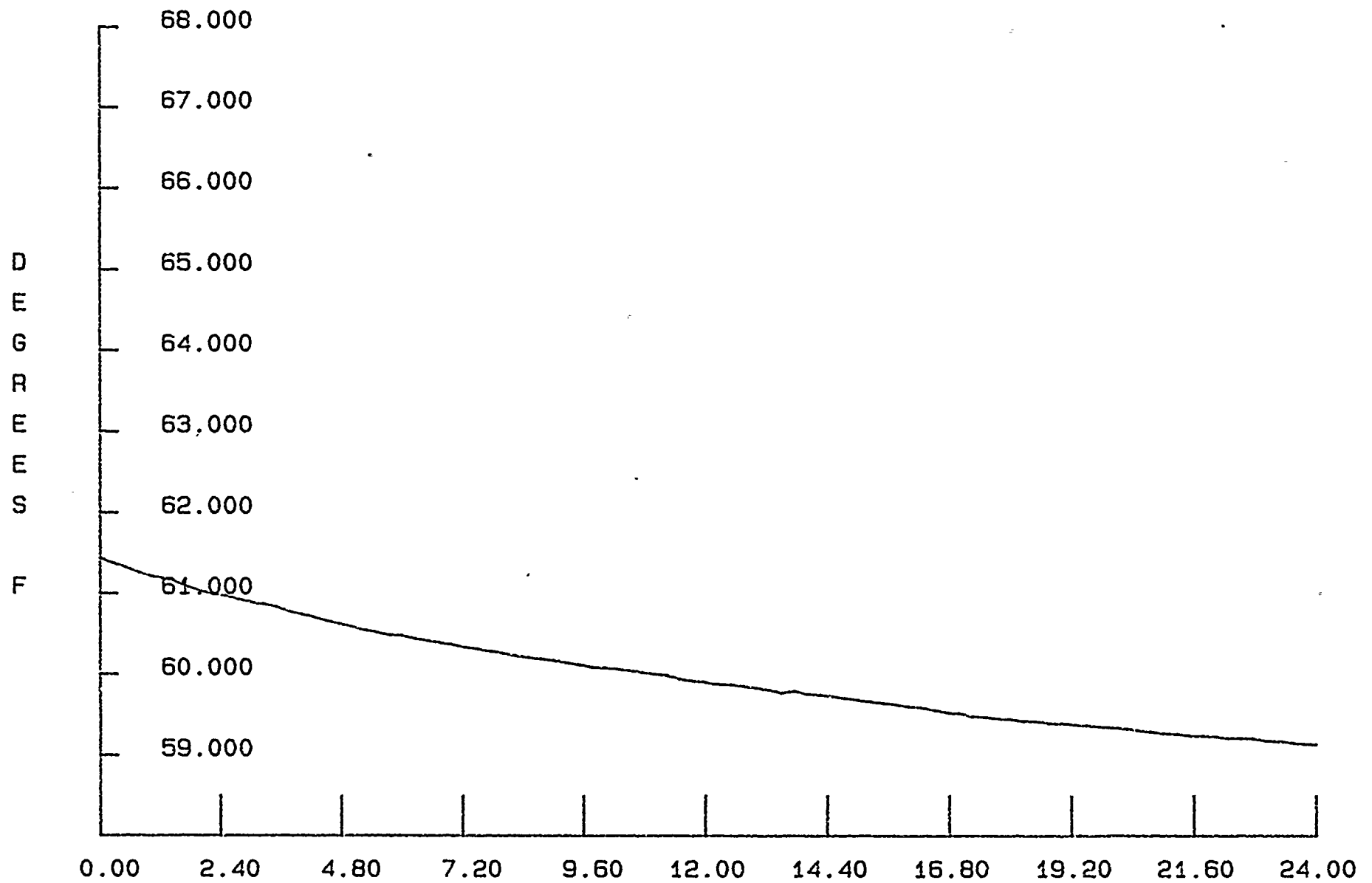
LEAK RATE < MAX AND > MIN ALLOWED

(Lo + Lam - .25 La) <= Lc <= (Lo + Lam + .25 La)
0.2202 <= 0.2883 <= 0.3452

APPENDIX F
TYPE A PLOTS

Temperature vs Time
Pressure vs Time
Dew Point vs Time
Containment Mass vs Time
Mass Point Leakage Rate vs Time
Total Time Leakage Rate vs Time

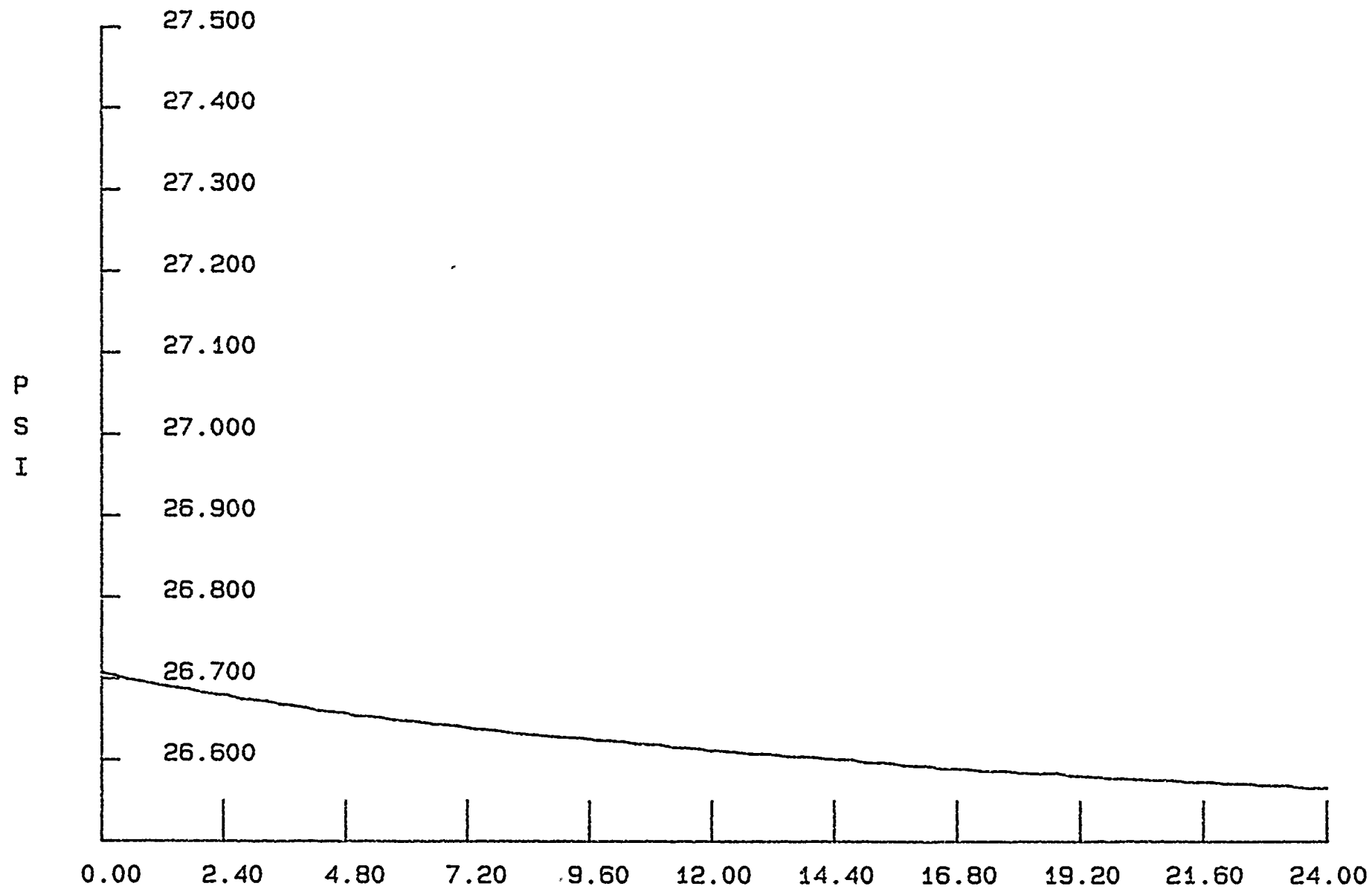
PLOT OF RTD AVG



20: 0: 26

DELTA TIME IN HOURS

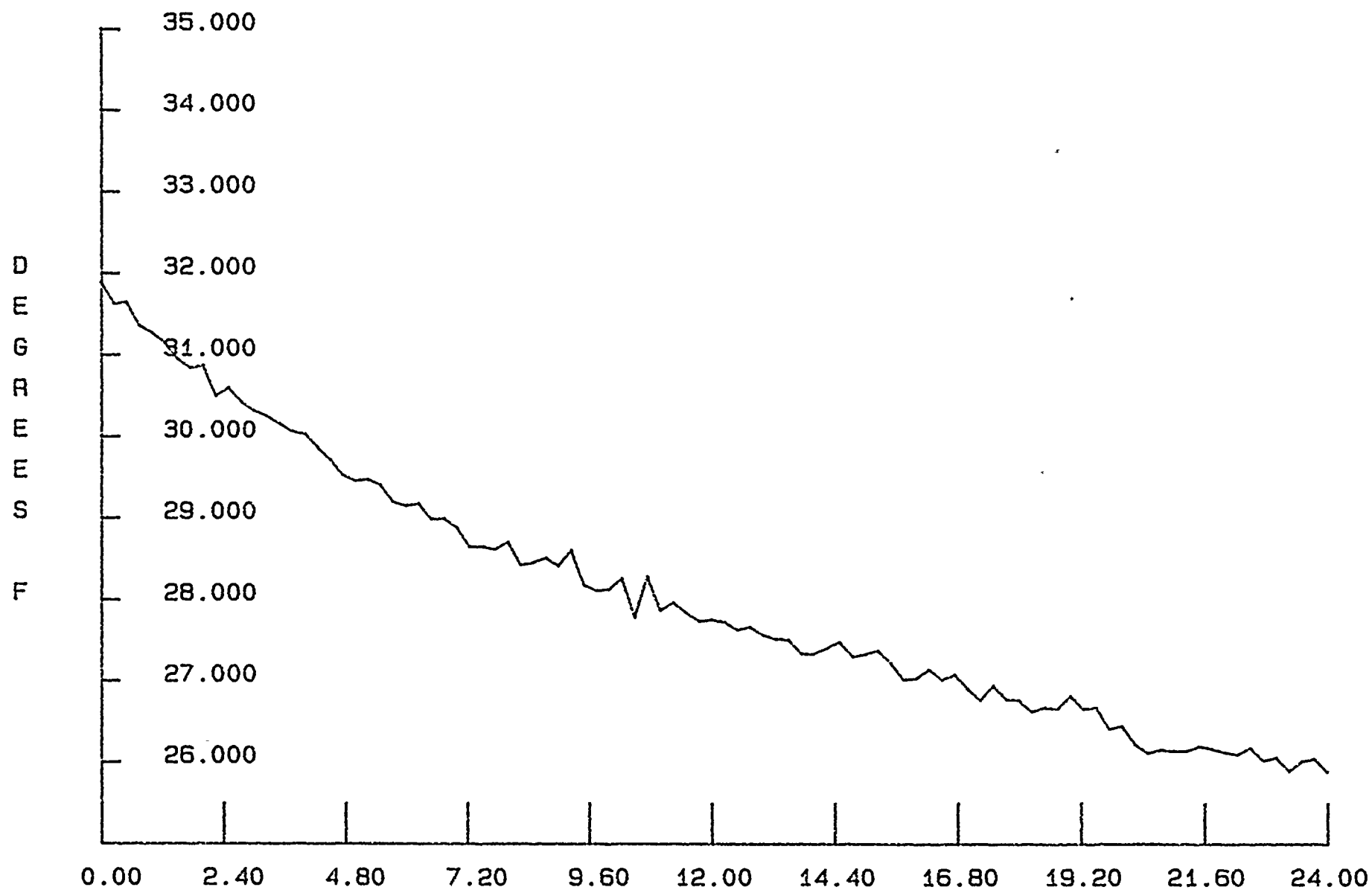
PLOT OF PRESSURE AVG



20: 0: 26

DELTA TIME IN HOURS

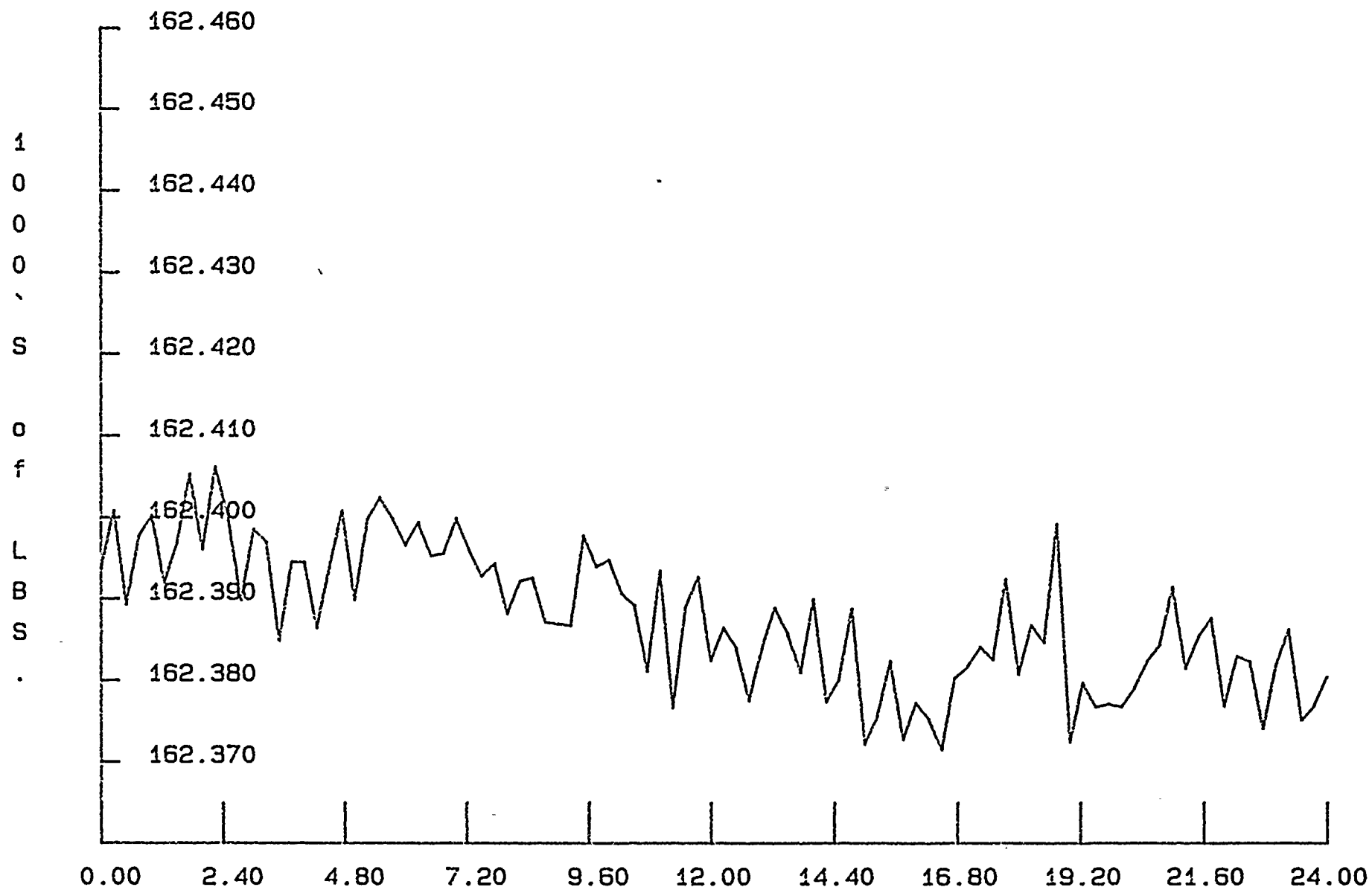
PLOT OF DEW CELL AVG



20: 0: 26

DELTA TIME IN HOURS

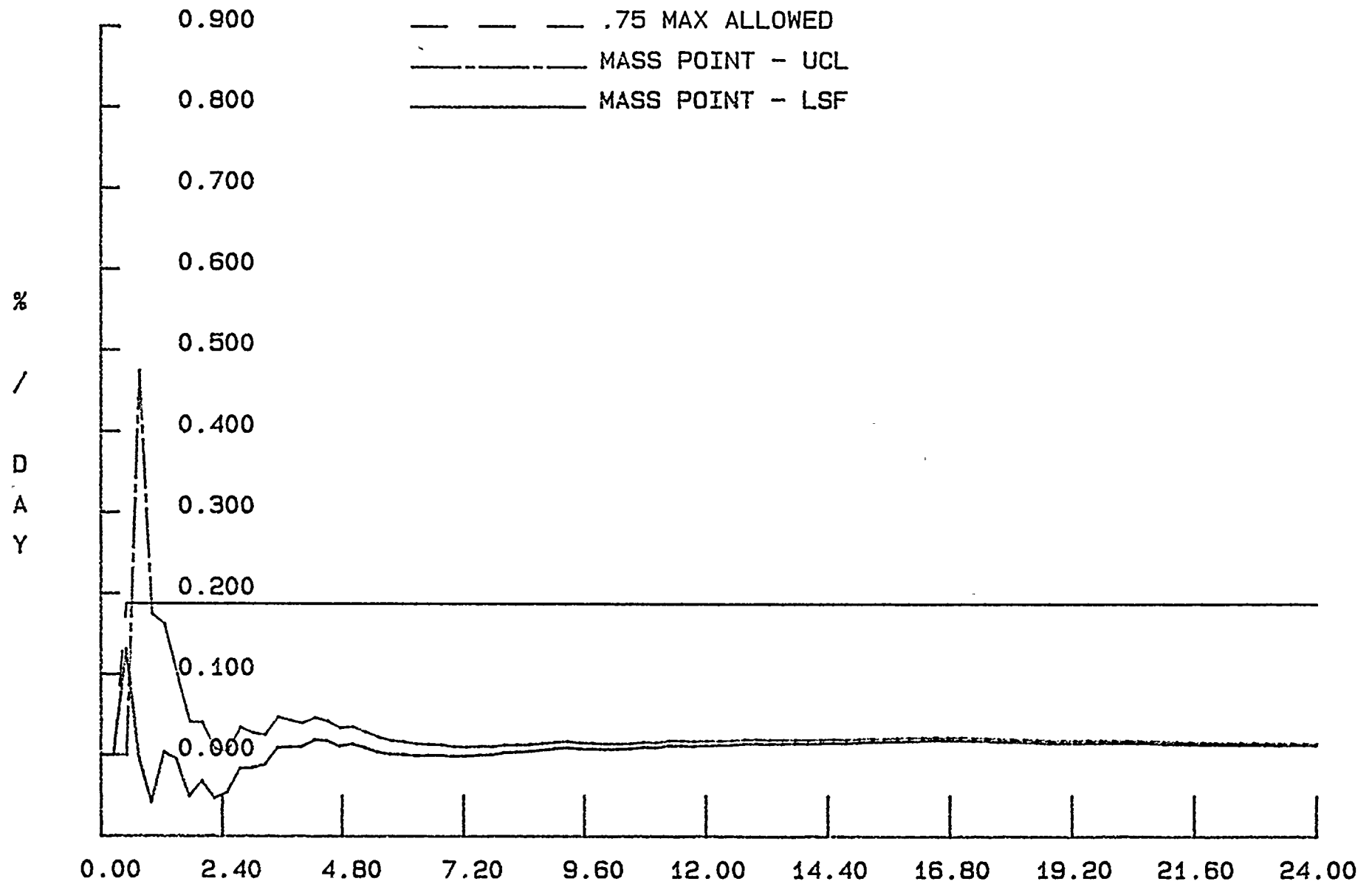
PLOT OF MEASURED MASS



20: 0: 26

DELTA TIME IN HOURS

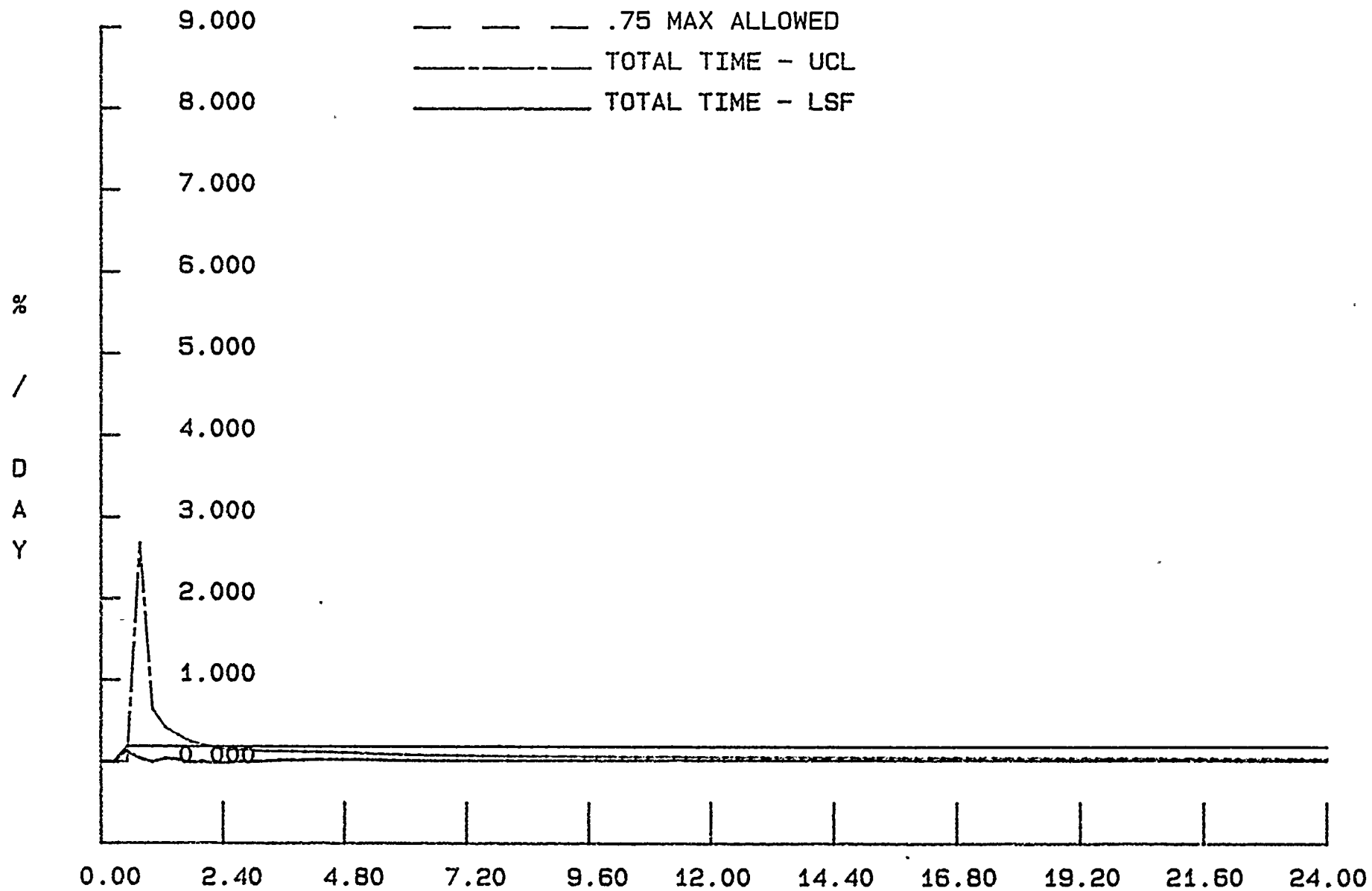
PLOT OF MASS POINT CALCULATED



20: 0: 26

DELTA TIME IN HOURS

PLOT OF TOTAL TIME CALCULATED



20: 0: 26

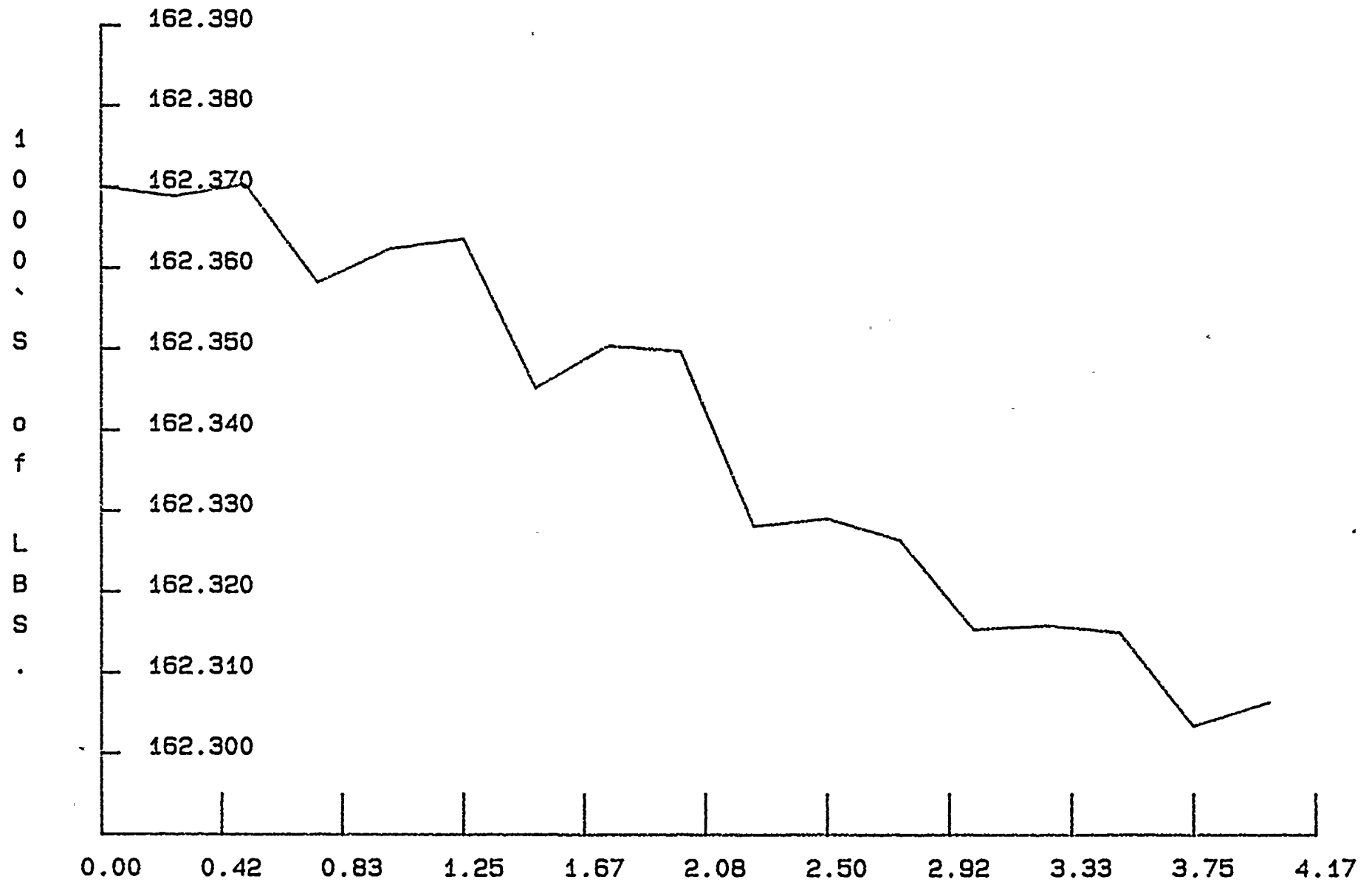
DELTA TIME IN HOURS

APPENDIX G

VERIFICATION TEST PLOTS

Containment Mass vs Time
Mass Point Leakage Rate vs Time
Total Time Analysis vs Time

PLOT OF MEASURED MASS

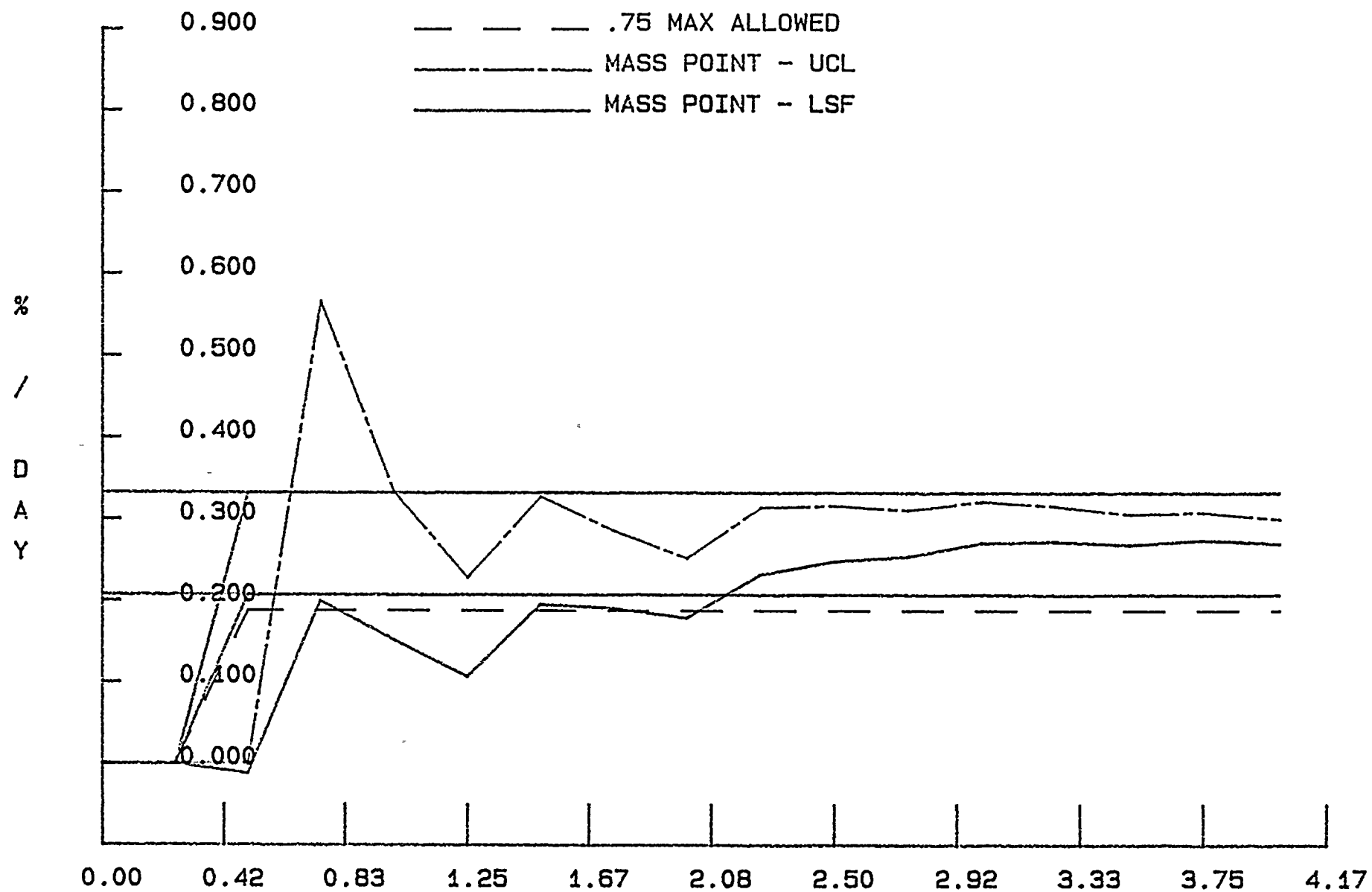


20: 15: 26

DELTA TIME IN HOURS



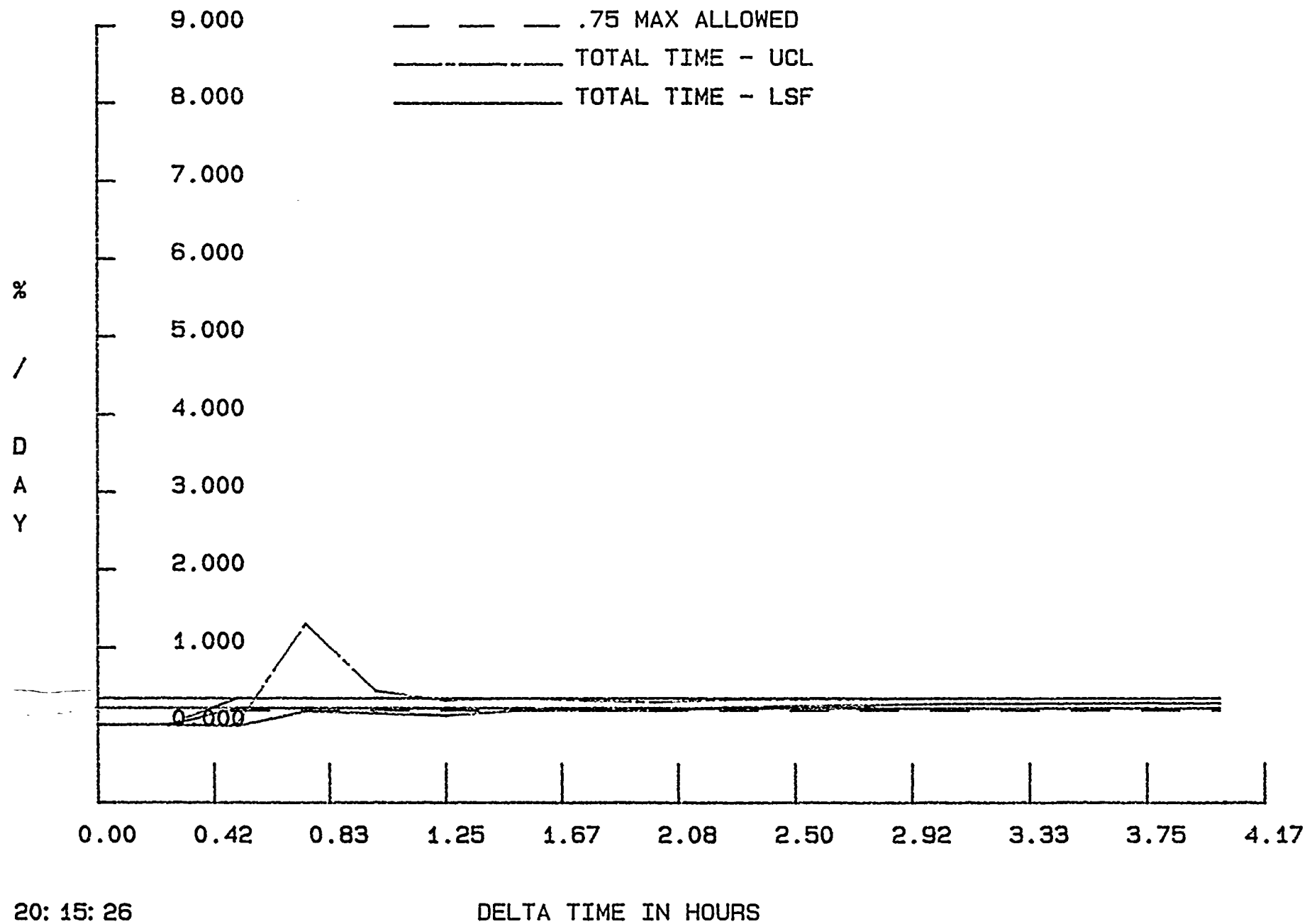
PLOT OF MASS POINT CALCULATED



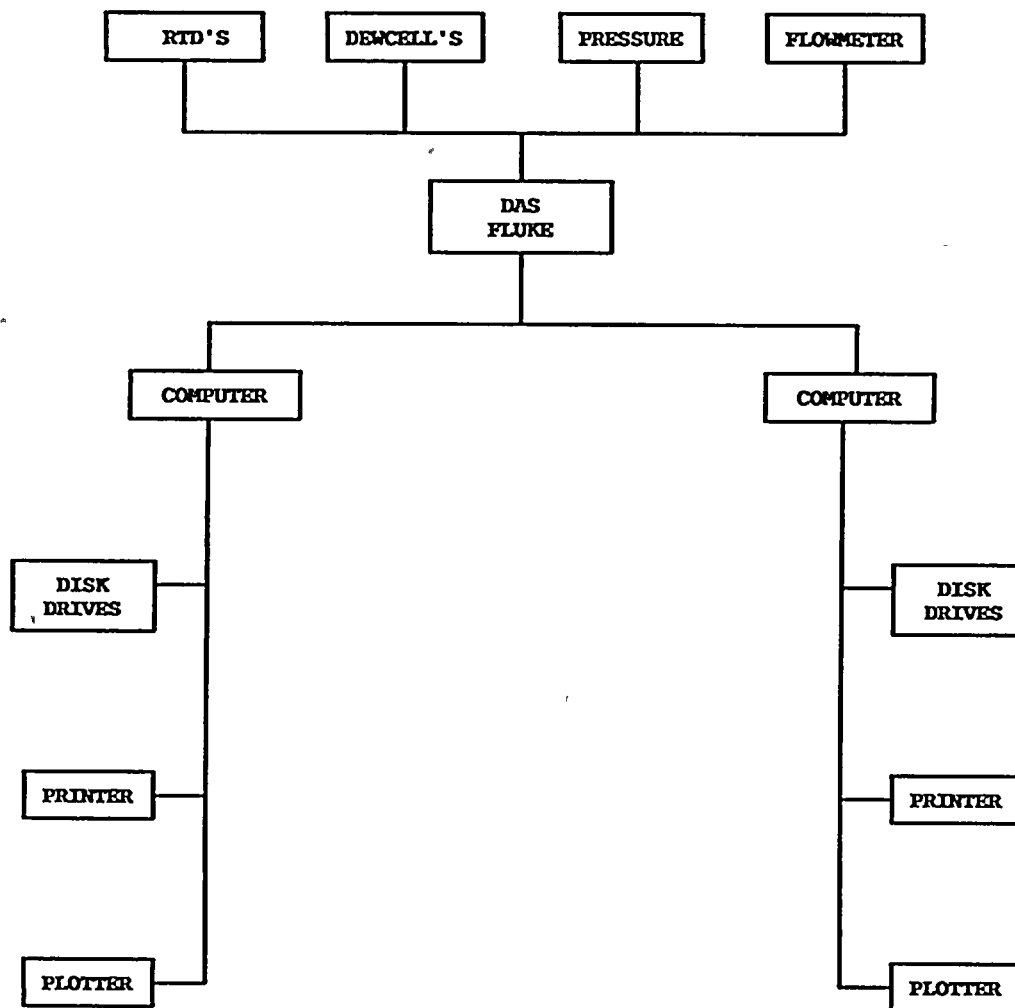
20: 15: 26

DELTA TIME IN HOURS

PLOT OF TOTAL TIME CALCULATED



APPENDIX H
SCHEMATIC FOR LEAKAGE RATE MEASURING SYSTEM



APPENDIX I

1986 REFUELING OUTAGE B&C

TEST SUMMARY

LOCAL LEAK RATE TEST RESULTS OF UNIT TWO 1986 REFUELING OUTAGE

INTRODUCTION

Local Leak Rate Tests were conducted on Unit Two's containment pressure boundaries in accordance with guidelines set forth in 10 CFR 50 Appendix J, the FSAR, and the Plant Technical Specifications. Testing was performed via plant procedure 2 THP 4030 STP.203, "Type B&C Leak Rate Test". The program consists of "Type B" tests designed to determine leakage through the containment electrical and pipe penetrations airlock door seals and overall airlock leakage; and "Type C" tests designed to determine leakage through containment isolation valves.

The leakage detection instrumentation used in the conduct of the "Type B&C" tests was certified, traceable to the National Institute of Standards Technology and calibrated prior to the tests. The primary instruments consist of three to four calibrated flow meters of different ranges, connected in parallel. A test is performed by isolating a test volume bound by the containment isolation barriers under examination. The test volume is pressurized to 12.0 (+0.5) psig. A regulator in the air supply line to the leak rate monitor maintains the test pressure while the flow meters measure the air flow required to maintain the pressure. This flow is equivalent to the leakage out of the test volume. Exact test pressure and temperature is recorded and used to convert the measured leakage to standard conditions.

TYPE B&C TESTING SUMMARY

TABLE 1 summarizes the results obtained during the "As Found" testing phase. The first test result identified is the As Found leakage of the containment boundary. Any subsequent listed leakages show the effects of maintenance activities performed on the boundary. The last leakage indicates the "As Left" condition of the boundary.

The valves that underwent repairs are shown in TABLE 2 giving both the results of "As Found" and "As Left" testing. Additionally, TABLE 2 lists the repairs made during the outage on valves that had excessive leakage.

CHECK VALVES

During the 1986 outage three check valves exhibited excessive leakage. Two of the valves required change-out of their internals for effective repair. The third valve, CS-321, was replaced in its entirety when repair activities did not resolve the leakage. The valve, when replaced, was moved out of the Regenerative Heat Exchanger Room to the pipe annulus of containment to reduce radioactivity during testing and repair. The valve was successfully tested following installation.

REMOTELY OPERATED VALVES

There were eight failures of remotely operated valves that required maintenance. Three of the valves (ECR-31, ECR-32, ECR-33) are of the same application on the Air Particle Rad Gas Monitor and have been a continuing problem. Two of the three are of the same design but history tends to support an application problem rather than a design concern. Repairs performed to reduce the leakage included cleaning of valve internals, replacement of internals and stroke adjustments.

The remaining five valves which failed are of different design and configuration. Two of the valves (VCR-202, a 14" butterfly; and ICM-306, an 18" double-disc gate) require only cleaning of the valve seat surface for corrective action. Two others required lapping of the valve seat (ICM-250) and valve internal change-out (XCR-103). The remaining valve, NCR-107, required to be replaced when repair activities failed to reduce the leakage.

TYPE B&C TEST RESULTS

Summation of the leakage rates of all credible leak paths as described in 2 THP 4030 STP.203 resulted in a total leakage of 4,203.8 sccm. In terms of allowable leakage (L_A), this is represented as 3.8% of L_A where the acceptance criteria is 60% of L_A for the "As Left" condition.

A summation of the "As Found" was not obtainable due to the excessive leakage of check valve CS-321. Efforts to quantify the leakage of the valve were unsuccessful. The violation of Technical Specifications was reported to the NRC via Licensee Event Report #050-316/86-09.

***** D. C. COOK NUCLEAR PLANT, UNIT NO. 2 *****
 TYPE "B" AND "C" LEAK RATE TEST CONTAINMENT ISOLATION VALVES

TAB 1

TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|--------------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 1 | CLV #1 WCR-900 & WCR-902 | 720.0 | 0.0 | 0.0 | 51.2 | 12.4 | 193 |
| 2 | CLV #1 WCR-901 & WCR-903 | 720.0 | 60.0 | 61.1 | 51.2 | 12.0 | 193 |
| 3 | CLV #4 WCR-912 & WCR-914 | 720.0 | 0.0 | 0.0 | 52.3 | 12.5 | 193 |
| 4 | CLV #4 WCR-913 & WCR-915 | 720.0 | 60.0 | 61.3 | 52.3 | 12.2 | 193 |
| 5 | CUV #1 WCR-920 & WCR-922 | 480.0 | 60.0 | 61.6 | 52.3 | 12.5 | 193 |
| 6 | CUV #1 WCR-921 & WCR-923 | 480.0 | 60.0 | 61.6 | 52.3 | 12.5 | 193 |
| 7 | CUV #4 WCR-932 & WCR-934 | 480.0 | 60.0 | 61.0 | 52.3 | 12.0 | 193 |
| 8 | CUV #4 WCR-933 & WCR-935 | 480.0 | 0.0 | 0.0 | 52.3 | 12.3 | 193 |
| 9 | RCP #1 WCR-941 & WCR-945 | 360.0 | 0.0 | 0.0 | 70.9 | 12.2 | 193 |
| 10 | RCP #1 WCR-951 & WCR-955 | 360.0 | 60.0 | 60.2 | 68.8 | 12.1 | 193 |
| 11 | RCP #4 WCR-944 & WCR-948 | 360.0 | 0.0 | 0.0 | 39.5 | 12.5 | 193 |
| 12 | RCP #4 WCR-954 & WCR-958 | 360.0 | 60.0 | 62.1 | 37.7 | 12.2 | 193 |



TABLE 1
 TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|--------------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 13 | CLV #2 WCR-904 & WCR-906 | 720.0 | 0.0 | 0.0 | 64.1 | 12.5 | 194 |
| 14 | CLV #2 WCR-905 & WCR-907 | 720.0 | 0.0 | 0.0 | 64.1 | 12.2 | 194 |
| 15 | CLV #3 WCR-908 & WCR-910 | 720.0 | 0.0 | 0.0 | 66.2 | 12.2 | 194 |
| 16 | CLV #3 WCR-909 & WCR-911 | 720.0 | 0.0 | 0.0 | 66.2 | 12.0 | 194 |
| 17 | CUV #2 WCR-924 & WCR-926 | 480.0 | 0.0 | 0.0 | 73.4 | 12.5 | 194 |
| 18 | CUV #2 WCR-925 & WCR-927 | 480.0 | 0.0 | 0.0 | 73.4 | 12.4 | 194 |
| 19 | CUV #3 WCR-928 & WCR-930 | 480.0 | 60.0 | 60.2 | 69.3 | 12.1 | 194 |
| 20 | CUV #3 WCR-929 & WCR-931 | 480.0 | 0.0 | 0.0 | 67.2 | 12.2 | 194 |
| 21 | RCP #2 WCR-942 & WCR-944 | 360.0 | 0.0 | 0.0 | 67.2 | 12.5 | 194 |
| 22 | RCP #2 WCR-952 & WCR-956 | 360.0 | 0.0 | 0.0 | 65.1 | 12.2 | 194 |
| 23 | RCP #3 WCR-943 & WCR-947 | 360.0 | 0.0 | 0.0 | 65.1 | 12.5 | 194 |
| 24 | RCP #3 WCR-953 & WCR-957 | 360.0 | 0.0 | 0.0 | 63.1 | 12.0 | 194 |



***** D. C. COOK NUCLEAR PLANT, UNIT NO. 2 *****
 TYPE "B" AND "C" LEAK RATE TEST CONTAINMENT ISOLATION VALVES

TAB 1

TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------------------|----------------------|----------------------|----------------------|--------------|--------------|------------|
| 25 | INST. RM. EAST WCR-960 & WCR-962 | 240.0 | 0.0 | 0.0 | 64.7 | 12.5 | 193 |
| 26 | INST. RM. EAST WCR-961 & WCR-963 | 240.0 | 0.0 | 0.0 | 64.7 | 12.5 | 193 |
| 27 | INST. RM. WEST WCR-964 & WCR-966 | 240.0 | 0.0 | 0.0 | 65.7 | 12.1 | 193 |
| 28 | INST. RM. WEST WCR-965 & WCR-967 | 240.0 | 60.0 | 60.4 | 65.7 | 12.1 | 193 |
| 29 | INST. RM. VENT. SUPPLY VCR-101 & VCR-201 | 1680.0 | 60.0 | 60.6 | 67.6 | 12.4 | 193 |
| 30 | INST. RM. VENT. SUPPLY VCR-102 & VCR-202 | 1680.0 | 15000.0
420.0 | 15853.7
421.2 | 67.6
72.9 | 15.0
12.3 | 193
193 |
| 31 | LOWER VENT. SUPPLY VCR-103 & VCR-203 | 2880.0 | 760.0
200.0 | 760.5
200.9 | 71.3
75.0 | 12.1
12.5 | 194
193 |
| 32 | LOWER VENT. EXH. VCR-104 & VCR-204 | 3600.0 | 1600.0 | 1616.1 | 69.3 | 12.5 | 194 |
| 33 | UPPER VENT. SUPPLY VCR-105 & VCR-205 | 3600.0 | 120.0
60.0 | 120.7
60.0 | 66.2
70.9 | 12.1
12.0 | 194
193 |
| 34 | UPPER VENT. EXH. VCR-106 & VCR-206 | 2880.0 | 460.0 | 465.9 | 60.5 | 12.2 | 193 |
| 35 | PRESS. EQUALIZATION VCR-107 & VCR-207 | 1440.0 | 0.0 | 0.0 | 69.3 | 12.4 | 194 |
| 36 | HYDROGEN RETURN LINE ECR-10 & ECR-20 | 60.0 | 0.0 | 0.0 | 70.3 | 12.1 | 194 |

TABLE 1

TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|----------------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 37 | ESR-1 ECR-11 & FCR 21 | 60.0 | 0.0 | 0.0 | 65.1 | 12.1 | 194 |
| 38 | ESR-2 ECR-12 & FCR 22 | 60.0 | 0.0 | 0.0 | 65.1 | 12.1 | 194 |
| 39 | ESR-3 ECR-13 & FCR 23 | 60.0 | 0.0 | 0.0 | 65.1 | 12.1 | 194 |
| 40 | ESR-4 ECR-14 & FCR 24 | 60.0 | 0.0 | 0.0 | 65.1 | 12.5 | 194 |
| 41 | ESR-5 ECR-15 & FCR 25 | 60.0 | 0.0 | 0.0 | 65.1 | 12.2 | 194 |
| 42 | ESR-6 ECR-16 & FCR 26 | 60.0 | 0.0 | 0.0 | 65.1 | 12.0 | 194 |
| 43 | ESR-7 ECR-17 & FCR 27 | 60.0 | 0.0 | 0.0 | 65.1 | 12.2 | 194 |
| 44 | ESR-8 ECR-18 & FCR 28 | 60.0 | 0.0 | 0.0 | 65.1 | 12.1 | 194 |
| 45 | ESR-9 ECR-19 & FCR 29 | 60.0 | 0.0 | 0.0 | 65.1 | 12.2 | 194 |
| 46 | RCP #1 SEAL WATER CS-442-1 | 120.0 | 0.0 | 0.0 | 62.0 | 12.3 | 165 |
| 47 | RCP #4 SEAL WATER CS-442-4 | 120.0 | 0.0 | 0.0 | 65.9 | 12.5 | 165 |
| 48 | RCP #2 SEAL WATER CS-442-2 | 120.0 | 60.0 | 60.6 | 65.9 | 12.3 | 165 |

***** D. C. COOK NUCLEAR PLANT, UNIT NO. 2 *****
 TYPE "H" AND "C" LEAK RATE TESTS CONTAINMENT ISOLATION VALVES

TAB 01

TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|-----------------------------------|----------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------|
| 49 | RCP #3 SEAL WATER CS-442-3 | 120.0 | 0.0 | 0.0 | 68.7 | 12.2 | 165 |
| 50 | RELIEF VALVE HEADFP TO PRT SI-1c9 | 120.0 | 0.0 | 0.0 | 68.7 | 12.0 | 165 |
| 51 | AIR PART. RAD GAS MONITOR SM-1 | 60.0 | 80.0 | 80.9 | 62.0 | 12.2 | 165 |
| 52 | NITROGEN TO ACCUMULATORS N-102 | 40.0 | 320.0
2600.0
1700.0
100.0 | 321.8
2610.3
1705.1
100.4 | 63.9
67.8
66.8
67.8 | 12.0
12.1
12.0
12.1 | 165
165
165
165 |
| 53 | NITROGEN TO PRT N-159 | 45.0 | 270.0 | 270.6 | 69.7 | 12.1 | 165 |
| 54 | PRIMARY WATER TO PRT PW-275 | 180.0 | 0.0 | 0.0 | 66.8 | 12.2 | 165 |
| 55 | CHARGING TO REGEN. HA. CS-321 | 180.0 | 99999.9
99999.9
99999.9
58000.0

61000.0
53000.0
43000.0

1000.0 | *****

58230.7

61131.2
54096.9
43169.2

993.0 | 67.8
67.8
64.9
67.8

69.7
67.8
65.9

79.6 | 12.0
12.0
12.1
12.1

12.1
13.0
12.0

12.1 | 165
165
165
165

165
165
165

165 |
| 56 | DEAD WEIGHT CALIBRATOR MPX-151-V1 | 30.0 | 0.0 | 0.0 | 58.5 | 12.0 | 193 |
| 57 | GLYCOL SUPPLY VCR-10 & VCR-11 | 480.0 | 0.0 | 0.0 | 70.9 | 12.0 | 193 |
| 58 | GLYCOL RETURN VCR-20 & VCR-21 | 480.0 | 60.0 | 60.5 | 70.9 | 12.5 | 193 |

***** D. C. COOK NUCL PLANT, UNIT NO. 2 *****
 TYPE "B" AND "C" LEAK RATE TEST CONTAINMENT ISOLATION VALVES

TAB 1

TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------------------|----------------------|----------------------------------------|----------------------------------------|------------------------------|------------------------------|--------------------------|
| 59 | RCDT VENT HEADER DCR-203 & DCR-207 | 120.0 | 0.0 | 0.0 | 79.0 | 12.1 | 194 |
| 60 | RCDT VENT HEADER N-160 & DCR-201 | 120.0 | 1250.0
2200.0
530.0
550.0 | 1241.2
2205.5
529.3
549.3 | 79.6
71.3
73.4
73.4 | 12.1
12.2
12.1
12.1 | 194
194
194
194 |
| | | | 60.0 | 60.4 | 73.4 | 12.5 | 194 |
| 61 | 1/C AHU DRAIN HDR. DCR-610 & DCR-611 | 300.0 | 0.0 | 0.0 | 78.5 | 12.3 | 194 |
| 62 | CLV AND CUV DRAIN HDR. DCR-620 & DCR-621 | 120.0 | 0.0 | 0.0 | 78.5 | 12.2 | 194 |
| 63 | RCDT DRAIN HDR. DCR-205 & DCR-206 | 480.0 | 0.0 | 0.0 | 78.5 | 12.2 | 194 |
| 64 | CONT. SUMP TO HUT DCR-600 & DCR-601 | 360.0 | 0.0 | 0.0 | 77.5 | 12.2 | 194 |
| 65 | LETDOWN DCR-300 | 120.0 | 0.0 | 0.0 | 76.5 | 12.0 | 194 |
| 66 | LETDOWN DCR-301 | 120.0 | 0.0 | 0.0 | 76.5 | 12.1 | 194 |
| 67 | RCP SEAL WATER RETURN DCR-250 & DCR-350 | 480.0 | 0.0 | 0.0 | 69.3 | 12.0 | 194 |
| 68 | RHR RECIRC. 1E ICM-305 | 1080.0 | 0.0 | 0.0 | 75.4 | 12.4 | 194 |
| 69 | RHR RECIRC. 1W ICM-306 | 1080.0 | 7000.0
7000.0
25000.0
20000.0 | 6990.3
6950.6
24881.4
19896.9 | 75.4
79.6
77.1
77.5 | 12.2
12.1
12.1
12.1 | 194
194
193
194 |
| | | | 1200.0 | 1190.3 | 82.7 | 12.2 | 194 |
| | | | 12000.0 | 11892.5 | 81.6 | 12.1 | 194 |
| | | | 420.0 | 416.2 | 83.7 | 12.2 | 194 |

***** D. C. COOR NUCI PLANT, UNIT NO. 2 *****
 TYPE "R" AND "C" LEAK RATE TEST CONTAINMENT ISOLATION VALVES

TAB 1

TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------------------|----------------------|----------------------|----------------------|--------------|--------------|------------|
| 70 | PW FOR RX CAV. SCRUB OCR-419 & OCR-420 | 120.0 | 0.0 | 0.0 | 70.3 | 12.2 | 194 |
| 71 | REFUEL. WATER TO RX CAV. SF-152 & SF-154 | 300.0 | 0.0 | 0.0 | 78.5 | 12.2 | 194 |
| 72 | REFUEL CAV. DRAIN SF-159 & SF-160 | 360.0 | 70.0 | 70.1 | 76.5 | 12.4 | 194 |
| 73 | HOT LEG SAMPLES NCR-105 & NCR-106 | 60.0 | 0.0 | 0.0 | 76.5 | 12.5 | 194 |
| 74 | PRESS. LIO. SAMPLES NCR-107 & NCR-108 | 60.0 | 3800.0
0.0 | 37932.1
0.0 | 71.7
78.5 | 12.0
12.2 | 193
194 |
| 75 | STEAM SAMPLE NCR-109 & NCR-110 | 60.0 | 0.0 | 0.0 | 71.7 | 12.1 | 193 |
| 76 | RCDT SAMPLE RCR-100 & RCR-101 | 60.0 | 70.0 | 70.2 | 73.4 | 12.3 | 194 |
| 77 | PRT SAMPLE DCR-202 & DCR-204 | 60.0 | 0.0 | 0.0 | 78.5 | 12.2 | 194 |
| 78 | ACCUM. SAMPLE ICR-5 & ICR-6 | 60.0 | 0.0 | 0.0 | 64.7 | 12.5 | 193 |
| 79 | AIR PART. RAD. GAS MON. FCR-33 & ECR-35 | 60.0 | 380.0
60.0 | 379.5
60.0 | 71.3
71.3 | 12.0
12.1 | 194
194 |
| 80 | NORTH SI DISCH. ICM-260 | 240.0 | 0.0 | 0.0 | 75.4 | 12.1 | 194 |
| 81 | SOUTH SI DISCH. ICM-265 | 240.0 | 0.0 | 0.0 | 70.3 | 12.0 | 194 |

***** D. C. COOK NUCLEAR PLANT, UNIT NO. 2 *****
 TYPE "H" AND "C" LEAK RATE TEST CONTAINMENT ISOLATION VALVES

TAB 1

TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|-----------------------------------------|----------------------|------------------------------------|------------------------------------|------------------------------|------------------------------|--------------------------|
| 82 | AIR PART. RAD GAS MON. FCR-31 & ECR-32 | 120.0 | 4700.0
110.0
4300.0
750.0 | 4730.6
110.8
4317.6
754.8 | 65.1
64.7
65.7
67.2 | 12.1
12.1
12.0
12.2 | 194
193
193
194 |
| | | | 820.0
1750.0
650.0 | 625.6
1761.4
656.6 | 60.5
65.1
67.2 | 12.0
12.1
12.4 | 193
194
194 |
| | | | 100.0 | 100.5 | 67.2 | 12.1 | 194 |
| 83 | CONTROL AIR TO CONT. ACP-100 & ACK-101 | 120.0 | 0.0 | 0.0 | 66.7 | 12.4 | 193 |
| 84 | CONTROL AIR TO CONT. ACK-102 & ACK-103 | 120.0 | 450.0
540.0
80.0 | 451.4
541.4
81.0 | 66.7
67.2
65.1 | 12.0
12.0
12.4 | 193
194
194 |
| 85 | NITROGEN TO PRT GCR-301 | 45.0 | 60.0 | 60.2 | 66.7 | 12.0 | 193 |
| 86 | NITROGEN TO ACCUM. GCR-314 | 60.0 | 0.0 | 0.0 | 61.0 | 12.1 | 194 |
| 87 | SAFETY INJ. TEST LINE SI-171.1/2.194 | 60.0 | 60.0 | 60.0 | 69.3 | 12.0 | 194 |
| 88 | PW TO PRT NCR-252 | 180.0 | 0.0 | 0.0 | 66.7 | 12.2 | 193 |
| 89 | RCP OIL CLRS. CCW CCM-452,454,458 | 1200.0 | 0.0 | 0.0 | 60.0 | 12.2 | 194 |
| 90 | RCP OIL CLRS. CCW CCM-451,453,459 | 1200.0 | 0.0 | 0.0 | 60.0 | 12.2 | 194 |
| 91 | EXCESS LETDOWN HX CCW CCR-460 & CCR-462 | 360.0 | 0.0 | 0.0 | 63.1 | 12.3 | 194 |

TAB 1

TYPE "CH" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|--------------------------------------|----------------------|----------------------|----------------------|--------------|--------------|------------|
| 92 | RX SUPPORTS CCW CCR-457 & CCW-135 | 240.0 | 60.0 | 60.9 | 61.0 | 12.3 | 194 |
| 93 | RX SUPPORTS CCW CCR-455 & CCR-456 | 240.0 | 60.0 | 60.7 | 63.1 | 12.3 | 194 |
| 94 | GRAB SAMPLE SM-4 & SM-6 | 60.0 | 0.0 | 0.0 | 69.3 | 12.3 | 194 |
| 95 | CUNT. PRESS. ALARM PPP-300 | 0.0 | 0.0 | 0.0 | 64.7 | 12.3 | 193 |
| 96 | CUNT. PRESS. ALARM PPP-301 | 0.0 | 0.0 | 0.0 | 66.7 | 12.2 | 193 |
| 97 | CUNT. PRESS. ALARM PPP-302 | 0.0 | 0.0 | 0.0 | 66.7 | 12.3 | 193 |
| 98 | CUNT. PRESS. ALARM PPP-303 | 0.0 | 0.0 | 0.0 | 64.7 | 12.3 | 193 |
| 99 | CUNT. PRESS. ALARM PPA-310 & PPA-311 | 0.0 | 0.0 | 0.0 | 64.7 | 12.3 | 193 |
| 100 | CUNT. PRESS. ALARM PPA-312 & PPA-313 | 0.0 | 0.0 | 0.0 | 64.7 | 12.3 | 193 |
| 101 | BURON INJECTION ICM-251 | 240.0 | 300.0 | 299.6 | 71.3 | 12.0 | 194 |
| 102 | BURON INJECTION ICM-250 | 240.0 | 850.0
170.0 | 848.9
170.5 | 71.3
70.9 | 12.0
12.2 | 194
193 |
| 103 | WELD CHANNEL PRESS. CA-1P15 | 30.0 | 0.0 | 0.0 | 69.3 | 12.0 | 194 |

TAB 1

TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------|----------------------|--------------------------|--------------------------|----------------------|----------------------|-------------------|
| 104 | WELD CHANNEL PRESS. CA-1 PIN | 30.0 | 0.0 | 0.0 | 69.3 | 12.1 | 194 |
| 105 | GRAB SAMPLE SM-8 & SM-10 | 60.0 | 60.0 | 60.2 | 63.1 | 12.0 | 194 |
| 106 | CPN COILS 2&5 CCW CCW-243-25 | 60.0 | 200.0 | 204.2 | 52.4 | 12.2 | 165 |
| 107 | CPN COILS 2&5 CCW CCW-244-25 | 60.0 | 60.0 | 61.3 | 53.3 | 12.3 | 165 |
| 108 | CPN COILS 3&4 CCW CCW-243-72 | 60.0 | 140.0 | 143.1 | 51.4 | 12.2 | 165 |
| 109 | CPN COILS 3&4 CCW CCW-244-72 | 60.0 | 180.0 | 183.6 | 51.4 | 12.1 | 165 |
| 110 | CCW TO CEU-1 CCM-430 | 90.0 | 0.0 | 0.0 | 49.2 | 12.0 | 193 |
| 111 | CCW FROM CEU-1 CCM-431 | 90.0 | 0.0 | 0.0 | 49.2 | 12.1 | 193 |
| 112 | CPN COILS 2&5 CCW CCR-440 | 90.0 | 2500.0
2200.0
60.0 | 2560.2
2202.1
61.1 | 49.2
72.4
53.3 | 12.2
12.2
12.1 | 193
193
193 |
| 113 | CCW TO CEU-2 CCM-432 | 90.0 | 0.0 | 0.0 | 63.1 | 12.1 | 194 |
| 114 | CCW TO CEU-2 CCM-433 | 90.0 | 80.0 | 80.5 | 63.1 | 12.0 | 194 |
| 115 | CPN COILS 3&4 CCW CCR-441 | 90.0 | 1400.0
60.0 | 1419.8
60.9 | 63.1
58.5 | 12.4
12.2 | 194
193 |

TAB 1

TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|-----------------------------------------|----------------------|----------------------|----------------------|--------------|--------------|------------|
| 116 | GLYCOL SUPPLY EXPANSION R-156 | 60.0 | 0.0 | 0.0 | 70.9 | 12.0 | 193 |
| 117 | GLYCOL RETURN EXPANSION R-157 | 60.0 | 0.0 | 0.0 | 70.9 | 12.2 | 193 |
| 118 | POST ACC. SAMPLE RET. NS-357 | 15.0 | 60.0 | 61.0 | 61.0 | 12.4 | 165 |
| 119 | POST ACC. SAMPLE RET. ECR-496 & ECR-497 | 15.0 | 0.0 | 0.0 | 69.3 | 12.4 | 194 |
| 120 | POST ACC. SAMPLE SUPPLY ECR-416 | 15.0 | 0.0 | 0.0 | 71.9 | 12.1 | 193 |
| 121 | POST ACC. SAMPLE SUPPLY ECR-417 | 15.0 | 0.0 | 0.0 | 78.5 | 12.3 | 194 |
| 122 | CONTAINMENT SAMPLING ECR-535 | 30.0 | 0.0 | 0.0 | 64.1 | 12.3 | 194 |
| 123 | CONTAINMENT SAMPLING ECR-536 | 30.0 | 0.0 | 0.0 | 63.1 | 12.3 | 194 |
| 124 | LOWER RMS RETURN ECR-36 | 120.0 | 0.0 | 0.0 | 61.0 | 12.1 | 194 |
| 125 | PLANT AIR TO CONT ECR-46 | 120.0 | 60.0
60.0 | 59.7
60.0 | 75.4
75.4 | 12.0
12.3 | 194
194 |
| 126 | PLANT AIR TO CONT CHECK VALVE PA-342 | 120.0 | 0.0 | 0.0 | 62.0 | 12.2 | 165 |
| 127 | H2 SAMPLE RETURN LINE CHK VLV NS-283 | 60.0 | 60.0 | 60.6 | 63.9 | 12.2 | 165 |

***** D. C. COOK NUCLEAR PLANT, UNIT NO. 2 *****
 TYPE "B" AND "C" LEAK RATE TESTS - CONTAINMENT ISOLATION VALVES

TAB 1

TYPE "B" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|----------------------------------|----------------------|------------------------|------------------------|----------------------|----------------------|-------------------|
| 1 | 612" AIRLOCK | 5511.0 | 130.0 | 130.4 | 71.0 | 12.2 | 193 |
| 2 | 650" AIRLOCK | 5511.0 | 60.0 | 60.1 | 79.0 | 12.5 | 194 |
| 3 | ZONE 3 PENETRATIONS | 1173.0 | 0.0
0.0
0.0 | 0.0
0.0
0.0 | 63.6
69.8
75.4 | 12.1
12.4
12.2 | 193
193
194 |
| 4 | ZONE 4 PENETRATIONS | 1173.0 | 1530.0
1100.0 | 1532.6
1098.5 | 68.2
75.4 | 12.0
12.2 | 194
194 |
| 5 | FUEL TRANSFER BLIND FLANGE CPN-1 | 1200.0 | 460.0
7500.0
0.0 | 459.4
7493.3
0.0 | 71.3
72.9
75.0 | 12.0
12.1
12.2 | 194
193
193 |
| 6 | PLANT AIR TO CON. BLIND FLANGE | 1200.0 | 0.0
0.0 | 0.0
0.0 | 73.4
75.4 | 12.1
12.3 | 194
194 |
| 7 | ICE LOADING BLIND FLANGE CPN-57 | 440.0 | 0.0
60.0 | 0.0
60.2 | 77.5
74.0 | 12.1
12.4 | 194
193 |
| 8 | ICE LOADING BLIND FLANGE CPN-80 | 720.0 | 0.0
60.0 | 0.0
60.1 | 77.5
75.0 | 12.0
12.3 | 194
193 |
| 9 | FLUX THIMBLE FLANGE | 960.0 | 60.0
0.0 | 60.9
0.0 | 54.3
68.8 | 12.0
12.1 | 193
193 |
| 10 | SPARE PENETRATION CPN-67 | 240.0 | 0.0 | 0.0 | 71.3 | 12.4 | 194 |

***** D. C. COOK NUCL APT. UNIT NO. 2 *****
 TYPE "B" AND "C" LEAK RATE TEST CONTAINMENT ISOLATION VALVES

TABLE 1

TYPE "B" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------------------|----------------------|-----------------------|-----------------------|----------------------|----------------------|-------------------|
| 11 | 650' EQUIP. HATCH RING BODY FLANGE SEAL | 55.0 | 0.0
0.0 | 0.0
0.0 | 75.4
70.9 | 12.0
12.1 | 194
193 |
| 12 | 650' AIRLOCK EQUIP. HATCH COVER FLG SEAL | 55.0 | 120.0
360.0
0.0 | 119.4
360.4
0.0 | 75.4
70.9
75.0 | 12.0
12.1
12.0 | 194
193
193 |

TABLE 2

| <u>VALVE</u> | <u>SYSTEM</u> | <u>AS FOUND
LEAKAGE (SCCM)</u> | <u>AS LEFT
LEAKAGE (SCCM)</u> | <u>CORRECTIVE ACTION</u> |
|------------------|--------------------------------------------------------------|------------------------------------|-----------------------------------|----------------------------------------------|
| VCR-202 | Lower
Containment
Ventilation
Exhaust | 15,853.7 | 421.2 | Cleaned Valve Seat |
| N-102 | Nitrogen to
Accumulators | 321.8 | 100.4 | Replaced Plug, Gasket
Seat and Disc |
| CS-321 | Charging to
Regen Heat
Exchanger | Unquantified | 993.0 | Replaced Valve |
| N-160 | Nitrogen/Vent
Header for
Reactor Coolant
Drain Tank | 1241.2 | 60.4 | Replaced Disc and
Hanger |
| ICM-306 | W RHR Recirculation
Sump Line | 6990.3 | 416.2 | Cleaned Valve |
| NCR-107 | Pressurize Liquid
Sample | 37,932.1 | 0.0 | Replaced Valve |
| ECR-33 | Air Particle
Rad Gas Monitor | 379.5 | 60.0 | Cleaned Valve and
Set Stroke |
| ECR-31
ECR-32 | Air Particle
Rad Gas Monitor | 4730.6 | 100.5 | Set Stroke (ECR-31)
Lapped Seats (ECR-32) |
| XCR-103 | Control Air to
Containment | 451.4 | 81.0 | Replaced Seat, Stem,
Plug and Gaskets |
| ICM-250 | Boron Injection | 848.9 | 170.5 | Recut Seat, Lapped
and Repacked |



APPENDIX J

1988/9 REFUELING OUTAGE B&C

TEST SUMMARY

LOCAL LEAK RATE TEST RESULTS OF UNIT TWO 1988-89 SGRP OUTAGE

INTRODUCTION

Local Leak Rate Tests were conducted on Unit Two's containment pressure boundaries in accordance with guidelines set forth in 10 CFR 50 Appendix J, the FSAR, and the Plant Technical Specifications. Testing was performed via plant procedure 2 THP 4030 STP.203, "Type B&C Leak Rate Test". The program consists of "Type B" tests designed to determine leakage through the containment electrical and pipe penetrations airlock door seals and overall airlock leakage; and "Type C" tests designed to determine leakage through containment isolation valves.

The leakage detection instrumentation used in the conduct of the "Type B&C" tests was certified, traceable to the National Institute of Standards Technology, and calibrated prior to the tests. The primary instruments consist of three to four calibrated flow meters of different ranges, connected in parallel. An additional, larger single flow meter was used in quantifying some leakages beyond the capabilities of the other four. A test is performed by isolating a test volume bound by the containment isolation barriers under examination. The test volume is pressurized to 12.0 (+0.5) psig. A regulator in the air supply line to the leak rate monitor maintains the test pressure while the flow meters measure the air flow required to maintain the pressure. This flow is equivalent to the leakage out of the test volume. Exact test pressure and temperature is recorded and used to convert the measured leakage to standard conditions.

Due to the length of the SGRP Outage, all containment pressure boundaries were tested at the start of the outage and again prior to its completion. Valves that were found to have excessive leakage during "As Found" testing were repaired at the time and retested to ensure acceptability. Similarly, the "As Left" testing was performed to determine the return-to-operation status of the boundaries with repairs being made when required.

SGRP OUTAGE TYPE B&C TESTING SUMMARY

TABLE 1 summarizes the results obtained during the "As Found" testing phase. The first test result identified is the As Found leakage of the containment boundary. Any subsequent listed leakages show the effects of maintenance activities performed on the boundary. TABLE 2 contains the results of "As Left" with the last test result providing the status of the boundary when returned to service.

1. The first part of the report discusses the general situation of the country and the progress of the work. It also mentions the results of the work done in the past year.

2. The second part of the report discusses the work done in the past year. It mentions the results of the work done in the past year and the progress of the work.

3. The third part of the report discusses the work done in the past year. It mentions the results of the work done in the past year and the progress of the work.

4. The fourth part of the report discusses the work done in the past year. It mentions the results of the work done in the past year and the progress of the work.

5. The fifth part of the report discusses the work done in the past year. It mentions the results of the work done in the past year and the progress of the work.

6. The sixth part of the report discusses the work done in the past year. It mentions the results of the work done in the past year and the progress of the work.

7. The seventh part of the report discusses the work done in the past year. It mentions the results of the work done in the past year and the progress of the work.

8. The eighth part of the report discusses the work done in the past year. It mentions the results of the work done in the past year and the progress of the work.

9. The ninth part of the report discusses the work done in the past year. It mentions the results of the work done in the past year and the progress of the work.

10. The tenth part of the report discusses the work done in the past year. It mentions the results of the work done in the past year and the progress of the work.

The valves that underwent repairs are shown in TABLE 3 giving both the results of "As Found" and "As Left" testing. Additionally, TABLE 3 lists the repairs made during the outage on valves that had excessive leakage.

CHECK VALVES

During the SGRP Outage testing five check valves were repaired due to excessive leakage with one valve be repaired during both "As Found" and "As Left" testing. Two of the valves manufacturer were Conval; Two, Alouco; and One, Edwards. Three of the repairs included a cleaning of the valve internals and light polishing of the seats. The remaining three were found to have worn components (including discs and springs) that were replaced.

The Conval valves, NS-283 and CS-442-2, are of two different applications. CS-442-2, is in the Reactor Coolant Pump Seal Inspection System (liquid application) whereas NS-283 is in the Hydrogen Sample Return Line (gas application). The liquid application valve was found not to have a high failure history, unlike that of the valve in the gas application as well as the other three valve failures which are of the same application. AEPSC is currently performing a technical review on the feasibility of utilizing a resilient seat for such applications.

MANUALLY OPERATED VALVES

The Refueling Cavity Drain SF-160 was found to have excessive leakage that was reduced when the travel nut was adjusted. Due to a similar event on Unit One the diaphragm was replaced to determine whether they were taking a set and would require periodic readjustment of the travel nut. Unfortunately the replaced diaphragm was disposed of before such an analysis could be performed.

REMOTELY OPERATED VALVES

The six valves exhibiting unacceptable leakage which are remotely operated are all in a non-liquid service. Five of the six valves required internal cleaning and lapping of the seat for correction. The sixth valve, VCR-205, required adjustment of the actuator arm to the valve disc for the valve to properly seat.

Two of the valves, ECR-33 and ECR-35, have historically required a significant amount of maintenance. Since the valves are of two different manufacturers but on the same piping (i.e., Air Particle Rad Gas Monitor suction line) it appears to be a service related concern for the valve design rather than the valve design itself. A Design Change Request will be processed to determine the availability of a different valve design for the application.



AIRLOCKS

The long duration of the outage provided the opportunity to refurbish the 612' and 650' airlocks. The efforts resulted in a decrease in leakage on the 612' airlock from 2902.6 sccm to 110.4 sccm and the 650' airlock from 2670 sccm to 0.0 sccm.

TYPE B&C TEST RESULTS

Summation of the leakage rates of all credible leak paths as described in 2 THP 4030 STP.203 resulted in a total leakage of 8283.3 sccm. In terms of allowable leakage (L_A) this is represented as 7.6% of L_A where the acceptance criteria is 60% of L_A . It should be noted that the 7.6% represents the summation of maximum leakage pathway whereas in the past the minimum pathway methodology was utilized. This change was a result of a NRC finding that minimum pathway calculations were unconservative.

When the "As Found" leakages were summed a total leakage of approximately 300% of L_A compared to the acceptance criteria of 60%. The violation of Technical Specification, which was also calculated by maximum pathway, was reported to the NRC via a Licensee Event Report #050-316/89-05.

THE
FEDERAL
BUREAU OF
INVESTIGATION
OF THE
DEPARTMENT OF JUSTICE
WASHINGTON, D. C.
20535

MEMORANDUM FOR THE DIRECTOR, FBI

SUBJECT: [Illegible]

DATE: [Illegible]

BY: [Illegible]

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TABLE 1
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|--------|-------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 1 | CLV #1 | WCR-900 & WCR-902 | 720.0 | 0.0 | 0.0 | 61.0 | 12.3 | 4 |
| 2 | CLV #1 | WCR-901 & WCR-903 | 720.0 | 0.0 | 0.0 | 61.0 | 12.3 | 4 |
| 3 | CLV #4 | WCR-912 & WCR-914 | 720.0 | 0.0 | 0.0 | 66.0 | 12.2 | 2 |
| 4 | CLV #4 | WCR-913 & WCR-915 | 720.0 | 0.0 | 0.0 | 66.0 | 12.4 | 2 |
| 5 | CUV #1 | WCR-920 & WCR-922 | 480.0 | 55.0 | 56.3 | 54.0 | 12.4 | 4 |
| 6 | CUV #1 | WCR-921 & WCR-923 | 480.0 | 75.0 | 76.2 | 54.0 | 12.0 | 4 |
| 7 | CUV #4 | WCR-932 & WCR-934 | 430.0 | 30.0 | 30.1 | 65.0 | 12.0 | 2 |
| 8 | CUV #4 | WCR-933 & WCR-935 | 430.0 | 60.0 | 60.3 | 65.0 | 12.0 | 2 |
| 9 | RCP #1 | WCR-941 & WCR-943 | 360.0 | 0.0 | 0.0 | 63.0 | 12.4 | 4 |
| 10 | RCP #1 | WCR-951 & WCR-953 | 360.0 | 0.0 | 0.0 | 63.0 | 12.4 | 4 |
| 11 | RCP #4 | WCR-944 & WCR-946 | 360.0 | 0.0 | 0.0 | 64.0 | 12.0 | 4 |
| 12 | RCP #4 | WCR-954 & WCR-956 | 350.0 | 0.0 | 0.0 | 62.0 | 12.0 | 4 |

TABLE 1
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|--------|-------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 13 | CLV #2 | WCR-904 & WCR-906 | 720.0 | 0.0 | 0.0 | 69.0 | 12.3 | 4 |
| 14 | CLV #2 | WCR-905 & WCR-907 | 720.0 | 20.0 | 20.1 | 69.0 | 12.3 | 4 |
| 15 | CLV #3 | WCR-903 & WCR-910 | 720.0 | 20.0 | 20.0 | 73.0 | 12.2 | 4 |
| 16 | CLV #3 | WCR-909 & WCR-911 | 720.0 | 0.0 | 0.0 | 73.0 | 12.1 | 4 |
| 17 | CUV #2 | WCR-924 & WCR-926 | 480.0 | 0.0 | 0.0 | 67.0 | 12.0 | 4 |
| 18 | CUV #2 | WCR-925 & WCR-927 | 480.0 | 0.0 | 0.0 | 67.0 | 12.1 | 4 |
| 19 | CUV #3 | WCR-923 & WCR-930 | 480.0 | 20.0 | 20.1 | 67.0 | 12.1 | 4 |
| 20 | CUV #3 | WCR-929 & WCR-931 | 480.0 | 20.0 | 20.1 | 68.0 | 12.1 | 4 |
| 21 | RCP #2 | WCR-942 & WCR-946 | 360.0 | 0.0 | 0.0 | 73.0 | 12.3 | 4 |
| 22 | RCP #2 | WCR-952 & WCR-956 | 360.0 | 0.0 | 0.0 | 73.0 | 12.3 | 4 |
| 23 | RCP #3 | WCR-943 & WCR-947 | 360.0 | 0.0 | 0.0 | 73.0 | 12.3 | 4 |
| 24 | RCP #3 | WCR-953 & WCR-957 | 360.0 | 0.0 | 0.0 | 73.0 | 12.3 | 4 |



TABLE 1
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 25 | INST. RM. EAST WCR-960 & WCR-962 | 240.0 | 0.0 | 0.0 | 65.0 | 12.3 | 2 |
| 26 | INST. RM. EAST WCR-961 & WCR-963 | 240.0 | 20.0 | 20.0 | 70.0 | 12.0 | 2 |
| 27 | INST. RM. WEST WCR-954 & WCR-956 | 240.0 | 0.0 | 0.0 | 63.0 | 12.0 | 4 |
| 28 | INST. RM. WEST WCR-965 & WCR-967 | 240.0 | 20.0 | 20.1 | 63.0 | 12.0 | 4 |
| 29 | INST. RM. VENT. SUPPLY VCR-101 & VCR-201 | 1680.0 | 70.0 | 69.7 | 81.0 | 12.3 | 2 |
| 30 | INST. RM. VENT. SUPPLY VCR-102 & VCR-202 | 1620.0 | 160.0 | 159.5 | 81.0 | 12.4 | 2 |
| 31 | LOWER VENT. SUPPLY VCR-103 & VCR-203 | 2680.0 | 0.0 | 0.0 | 83.0 | 12.3 | 4 |
| 32 | LOWER VENT. EXH. VCR-104 & VCR-204 | 3600.0 | 325.0 | 324.1 | 83.0 | 12.5 | 4 |
| 33 | UPPER VENT. SUPPLY VCR-105 & VCR-205 | 3600.0 | 17000.0 | 16899.4 | 83.0 | 12.3 | 4 |
| 34 | UPPER VENT. EXH. VCR-106 & VCR-206 | 2390.0 | 525.0 | 515.0 | 81.0 | 12.0 | 4 |
| 35 | PRESS. EQUALIZATION VCR-107 & VCR-207 | 1440.0 | 35.0 | 35.0 | 77.0 | 12.3 | 2 |
| 36 | HYDROGEN RETURN LINE ECR-10 & ECR-20 | 60.0 | 20.0 | 20.1 | 67.0 | 12.1 | 4 |



TABLE 1
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|-------------------|-----------------|----------------------|----------------------|----------------------|--------------|--------------|--------|
| 37 | ESR-1 | ECR-11 & ECR 21 | 60.0 | 20.0 | 20.1 | 63.0 | 12.0 | 4 |
| 38 | ESR-2 | ECR-12 & ECR 22 | 60.0 | 0.0 | 0.0 | 63.0 | 12.0 | 4 |
| 39 | ESR-3 | ECR-13 & ECR 23 | 60.0 | 0.0 | 0.0 | 63.0 | 12.0 | 4 |
| 40 | ESR-4 | ECR-14 & ECR 24 | 60.0 | 0.0 | 0.0 | 63.0 | 12.0 | 4 |
| 41 | ESR-5 | ECR-15 & ECR 25 | 60.0 | 0.0 | 0.0 | 63.0 | 12.0 | 4 |
| 42 | ESR-6 | ECR-16 & ECR 26 | 60.0 | 0.0 | 0.0 | 63.0 | 12.0 | 4 |
| 43 | ESR-7 | ECR-17 & ECR 27 | 60.0 | 0.0 | 0.0 | 63.0 | 12.0 | 4 |
| 44 | ESR-8 | ECR-18 & ECR 28 | 60.0 | 20.0 | 20.1 | 63.0 | 12.0 | 4 |
| 45 | ESR-9 | ECR-19 & ECR 29 | 60.0 | 0.0 | 0.0 | 63.0 | 12.0 | 4 |
| 46 | RCP #1 SEAL WATER | CS-442-1 | 120.0 | 0.0 | 0.0 | 64.7 | 12.1 | 1 |
| 47 | RCP #4 SEAL WATER | CS-442-4 | 120.0 | 400.0
20.0 | 20.0
20.0 | 65.3
67.2 | 12.0
12.1 | 1
3 |
| 48 | RCP #2 SEAL WATER | CS-442-2 | 120.0 | 0.0 | 0.0 | 69.9 | 12.1 | 1 |



TABLE 1
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 49 | RCP #3 SEAL WATER CS-442-3 | 120.0 | 0.0 | 0.0 | 68.8 | 12.1 | 1 |
| 50 | RELIEF VALVE HEADER TO PRT SI-139 | 120.0 | 0.0 | 0.0 | 63.7 | 12.0 | 1 |
| 51 | AIR PART. RAD GAS MONITOR SM-1 | 60.0 | 40.0 | 40.0 | 72.9 | 12.1 | 1 |
| 52 | NITROGEN TO ACCUMULATORS N-102 | 60.0 | 50.0 | 50.0 | 69.9 | 12.0 | 1 |
| 53 | NITROGEN TO PRT N-159 | 45.0 | 40.0 | 40.2 | 65.8 | 12.0 | 1 |
| 54 | PRIMARY WATER TO PRT PW-275 | 190.0 | 20.0 | 19.9 | 72.9 | 12.0 | 1 |
| 55 | CHARGING TO REGEN. HX. CS-321 | 190.0 | 200.0 | 200.6 | 68.8 | 12.1 | 1 |
| 56 | DEAD WEIGHT CALIBRATOR HPX-151-V1 | 30.0 | 0.0 | 0.0 | 69.9 | 12.1 | 4 |
| 57 | GLYCOL SUPPLY VCR-10 & VCR-11 | 430.0 | 100.0 | 130.2 | 63.9 | 12.0 | 4 |
| 58 | GLYCOL RETURN VCR-20 & VCR-21 | 430.0 | 0.0 | 0.0 | 69.9 | 12.0 | 4 |
| 59 | RCDT VENT HEADER DCR-201 & DCR-207 | 120.0 | 0.0 | 0.0 | 81.7 | 12.2 | 7 |
| 60 | RCDT VENT HEADER N-150 & DCR-201 | 120.0 | 90.0 | 39.1 | 81.3 | 12.0 | 3 |



TABLE 1
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------------------|----------------------|----------------------|----------------------|--------------|--------------|--------|
| 61 | I/C AHU DRAIN HDR. DCR-610 & DCR-611 | 300.0 | 0.0 | 0.0 | 81.3 | 12.0 | 3 |
| 62 | CLV AND CUV DRAIN HDR. DCR-620 & DCR-621 | 120.0 | 20.0 | 19.9 | 81.3 | 12.3 | 3 |
| 63 | RCDT DRAIN HDR. DCR-205 & DCR-206 | 480.0 | 0.0 | 0.0 | 81.3 | 12.1 | 3 |
| 64 | CONT. SUMP TO HUT DCR-600 & DCR-601 | 360.0 | 0.0 | 0.0 | 70.0 | 12.4 | 2 |
| 65 | LETDOWN QCR-300 | 120.0 | 0.0 | 0.0 | 81.3 | 12.0 | 3 |
| 66 | LETDOWN QCR-301 | 120.0 | 0.0 | 0.0 | 81.3 | 12.0 | 3 |
| 67 | RCP SEAL WATER RETURN QCM-250 & QCM-350 | 480.0 | 60.0 | 59.6 | 81.3 | 12.2 | 3 |
| 68 | RHP RECIRC. 'E' ICM-305 | 1080.0 | 200.0 | 193.3 | 81.3 | 12.1 | 3 |
| 69 | RHP RECIRC. 'N' ICM-306 | 1080.0 | 500.0 | 493.6 | 81.3 | 12.2 | 3 |
| 70 | PW FOR RX CAV. SCRUB DCR-210 & DCR-220 | 120.0 | 110.0 | 109.0 | 80.0 | 12.0 | 1 |
| 71 | REFUEL. WATER TO RX CAV. SF-150 & SF-154 | 300.0 | 0.0 | 0.0 | 79.0 | 12.1 | 1 |
| 72 | REFUEL CAV. DRAIN SF-150 & SF-154 | 360.0 | 43000.0
0.0 | 43019.6
0.0 | 73.0
73.0 | 12.2
12.1 | 3
3 |



TABLE 1
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|-------------------------|-------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 73 | HOT LEG SAMPLES | NCR-105 & NCR-106 | 60.0 | 0.0 | 0.0 | 81.3 | 12.2 | 3 |
| 74 | PRESS. LIQ. SAMPLES | NCR-107 & NCR-108 | 60.0 | 20.0 | 19.9 | 80.0 | 12.2 | 1 |
| 75 | STEAM SAMPLE | NCR-109 & NCR-110 | 60.0 | 20.0 | 19.9 | 80.0 | 12.2 | 1 |
| 76 | RCDT SAMPLE | RCR-100 & RCR-101 | 60.0 | 0.0 | 0.0 | 81.3 | 12.1 | 3 |
| 77 | PRT SAMPLE | DCR-202 & DCR-204 | 60.0 | 60.0 | 59.7 | 79.0 | 12.2 | 1 |
| 78 | ACCUM. SAMPLE | ICR-5 & ICR-6 | 60.0 | 0.0 | 0.0 | 79.0 | 12.0 | 1 |
| 79 | AIR PART. RAD. GAS MON. | ECR-33 & ECR-35 | 60.0 | 100.0 | 99.0 | 81.0 | 12.0 | 2 |
| 80 | NORTH SI DISCH. | ICM-260 | 240.0 | 0.0 | 0.0 | 69.0 | 12.0 | 2 |
| 81 | SOUTH SI DISCH. | ICM-265 | 240.0 | 0.0 | 0.0 | 69.0 | 12.0 | 2 |
| 82 | AIR PART. RAD GAS MON. | ECR-31 & ECR-32 | 120.0 | 80.0 | 79.9 | 71.0 | 12.0 | 2 |
| 83 | CONTROL AIR TO CONT. | XCR-100 & XCR-101 | 120.0 | 20.0 | 20.1 | 69.0 | 12.1 | 4 |
| 84 | CONTROL AIR TO CONT. | XCR-102 & XCR-103 | 120.0 | 50.0 | 50.0 | 71.0 | 12.1 | 2 |

TABLE 1
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LOM |
|-----------|-----------------------------------------|----------------------|----------------------|----------------------|--------------|--------------|--------|
| 55 | NITROGEN TO PRT GCP-301 | 45.0 | 50.0 | 50.0 | 69.0 | 12.0 | 2 |
| 56 | NITROGEN TO ACCUM. GCR-314 | 60.0 | 0.0 | 0.0 | 75.0 | 12.1 | 2 |
| 57 | SAFETY INJ. TEST LINE SI-171,172,194 | 60.0 | 0.0 | 0.0 | 79.0 | 12.0 | 2 |
| 83 | PW TO PRT NCR-252 | 130.0 | 0.0 | 0.0 | 71.0 | 12.2 | 2 |
| 89 | RCP OIL CLRS. CCW CCM-452,454,453 | 1200.0 | 9999.0
160.0 | *****
159.4 | 69.0
74.0 | 12.0
12.0 | 2
2 |
| 90 | RCP OIL CLRS. CCW CCM-451,453,459 | 1200.0 | 6500.0
350.0 | 6506.1
350.9 | 69.0
77.2 | 12.0
12.5 | 2
3 |
| 91 | EXCESS LETDOWN HX CCW CCR-450 & CCR-452 | 360.0 | 215.0 | 216.4 | 67.0 | 12.2 | 2 |
| 92 | RX SUPPORTS CCW CCR-457 & CCW-135 | 240.0 | 45000.0
0.0 | 45042.5
0.0 | 69.0
75.0 | 12.0
12.0 | 2
2 |
| 93 | RX SUPPORTS CCW CCR-455 & CCR-456 | 240.0 | 0.0 | 0.0 | 72.0 | 12.0 | 2 |
| 94 | GRAB SAMPLE SH-4 & SH-5 | 50.0 | 40.0 | 40.3 | 69.0 | 12.3 | 4 |
| 95 | CONT. PRESS. ALARM PPP-300 | 0.0 | 0.0 | 0.0 | 65.0 | 12.2 | 4 |
| 96 | CONT. PRESS. ALARM PPP-301 | 0.0 | 0.0 | 0.0 | 67.0 | 12.2 | 4 |

TABLE 1
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LOH |
|-----------|--------------------------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 97 | CONT. PRESS. ALARM PPP-302 | 0.0 | 0.0 | 0.0 | 67.0 | 12.2 | 4 |
| 98 | CONT. PRESS. ALARM PPP-303 | 0.0 | 0.0 | 0.0 | 65.0 | 12.2 | 4 |
| 99 | CONT. PRESS. ALARM PPA-310 & PPA-311 | 0.0 | 0.0 | 0.0 | 65.0 | 12.1 | 4 |
| 100 | CONT. PRESS. ALARM PPA-312 & PPA-313 | 0.0 | 0.0 | 0.0 | 65.0 | 12.3 | 4 |
| 101 | BORON INJECTION ICM-251 | 240.0 | 240.0 | 239.3 | 75.0 | 12.1 | 4 |
| 102 | BORON INJECTION ICM-250 | 240.0 | 220.0 | 219.0 | 75.0 | 12.0 | 4 |
| 103 | WELD CHANNEL PRESS. CA-131S | 30.0 | 0.0 | 0.0 | 76.0 | 12.1 | 1 |
| 104 | WELD CHANNEL PRESS. CA-131N | 30.0 | 0.0 | 0.0 | 76.0 | 12.1 | 1 |
| 105 | GRAB SAMPLE SM-5 & SM-10 | 60.0 | 20.0 | 20.1 | 67.5 | 12.1 | 1 |
| 106 | CPN COILS 245 CCW CCH-243-25 | 60.0 | 0.0 | 0.0 | 69.9 | 12.0 | 1 |
| 107 | CPN COILS 245 CCW CCH-244-25 | 60.0 | 50.0 | 55.2 | 69.9 | 12.2 | 1 |
| 108 | CPN COILS 304 CCW CCH-243-72 | 60.0 | 0.0 | 0.0 | 71.9 | 12.0 | 1 |

TABLE 1
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|-----------------------------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 109 | CPN COILS 334 CCW CCM-244-72 | 60.0 | 20.0 | 20.0 | 71.9 | 12.0 | 1 |
| 110 | CCW TO CEQ-1 CCM-430 | 90.0 | 0.0 | 0.0 | 79.0 | 12.0 | 4 |
| 111 | CCW FROM CEQ-1 CCM-431 | 90.0 | 115.0 | 114.0 | 79.0 | 12.0 | 4 |
| 112 | CPN COILS 235 CCW CCR-440 | 90.0 | 45.0 | 45.0 | 71.0 | 12.0 | 4 |
| 113 | CCW TO CEQ-2 CCM-432 | 90.0 | 0.0 | 0.0 | 74.0 | 12.1 | 4 |
| 114 | CCW TO CEQ-2 CCM-433 | 90.0 | 0.0 | 0.0 | 75.0 | 12.3 | 4 |
| 115 | CPN COILS 334 CCW CCR-441 | 90.0 | 20.0 | 19.9 | 75.0 | 12.0 | 4 |
| 116 | GLYCOL SUPPLY EXPANSION R-156 | 60.0 | 0.0 | 0.0 | 68.0 | 12.0 | 4 |
| 117 | GLYCOL RETURN EXPANSION R-157 | 60.0 | 0.0 | 0.0 | 69.0 | 12.1 | 4 |
| 118 | POST ACC. SAMPLE RET. NS-357 | 15.0 | 0.0 | 0.0 | 72.9 | 12.0 | 1 |
| 119 | POST ACC. SAMPLE RET. ECR-495 & ECR-497 | 15.0 | 0.0 | 0.0 | 75.1 | 12.2 | 3 |
| 120 | POST ACC. SAMPLE SUPPLY ECR-416 | 15.0 | 0.0 | 0.0 | 80.0 | 12.1 | 1 |

TABLE 1
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|--------------------------------------|----------------------|------------------------|------------------------|----------------------|----------------------|-------------|
| 121 | POST ACC. SAMPLE SUPPLY ECR-417 | 15.0 | 0.0 | 0.0 | 80.0 | 12.1 | 1 |
| 122 | CONTAINMENT SAMPLING ECR-535 | 30.0 | 20.0 | 19.9 | 73.0 | 12.0 | 2 |
| 123 | CONTAINMENT SAMPLING ECR-536 | 30.0 | 28.0 | 27.9 | 72.0 | 12.0 | 2 |
| 124 | LOWER RMS RETURN ECR-36 | 120.0 | 0.0 | 0.0 | 76.0 | 12.5 | 2 |
| 125 | PLANT AIR TO CONT PCR-40 | 120.0 | 125.0 | 124.4 | 77.0 | 12.1 | 4 |
| 126 | PLANT AIR TO CONT CHECK VALVE PA-342 | 120.0 | 120.0 | 118.7 | 51.3 | 12.0 | 3 |
| 127 | H2 SAMPLE RETURN LINE CHK VLV NS-283 | 50.0 | 600.0
230.0
40.0 | 578.3
230.9
40.0 | 72.9
65.8
68.9 | 12.0
12.0
12.0 | 1
1
1 |
| 123 | CONTROL AIR TO CONT. XCR-101 | 50.0 | 20.0 | 20.1 | 67.3 | 12.1 | 1 |
| 129 | CONTROL AIR TO CONT. XCR-103 | 60.0 | 0.0 | 0.0 | 67.3 | 12.4 | 1 |



TABLE 1
TYPE "B" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 1 | 612° AIRLOCK | 5511.0 | 2900.0 | 2902.6 | 73.0 | 12.2 | 3 |
| 2 | 650° AIRLOCK | 5511.0 | 2700.0 | 2670.1 | 86.0 | 12.2 | 3 |
| 3 | ZONE 3 PENETRATIONS | 1173.0 | 70.0 | 70.0 | 72.0 | 12.1 | 2 |
| 4 | ZONE 4 PENETRATIONS | 1173.0 | 1500.0 | 1494.4 | 74.0 | 12.0 | 2 |
| 5 | FUEL TRANSFER BLIND FLANGE CPN-1 | 1200.0 | 0.0 | 0.0 | 75.0 | 12.2 | 4 |
| 7 | ICE LOADING BLIND FLANGE CPN-57 | 480.0 | 0.0 | 0.0 | 75.0 | 12.0 | 4 |
| 8 | ICE LOADING BLIND FLANGE CPN-80 | 720.0 | 25.0 | 25.0 | 75.0 | 12.2 | 4 |
| 9 | FLUX THIMBLE FLANGE | 960.0 | 400.0 | 402.6 | 69.0 | 12.3 | 4 |
| 10 | SPARE PENETRATION CPN-67 | 240.0 | 0.0 | 0.0 | 80.0 | 12.0 | 1 |
| 11 | 650° EQUIP. HATCH RING BODY FLANGE SEAL | 55.0 | 0.0 | 0.0 | 75.0 | 12.0 | 4 |
| 12 | 650° AIRLOCK EQUIP. HATCH COVER FLG SEAL | 55.0 | 0.0 | 0.0 | 75.0 | 12.0 | 4 |

TABLE 2
 TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|--------|-------------------|----------------------|----------------------|----------------------|--------------|--------------|--------|
| ----- | | ----- | ----- | ----- | ----- | ----- | ----- | --- |
| 1 | CLV #1 | WCR-900 & WCR-902 | 720.0 | 170.0 | 173.6 | 48.4 | 12.0 | 1 |
| 2 | CLV #1 | WCR-901 & WCR-903 | 720.0 | 0.0 | 0.0 | 57.6 | 12.1 | 1 |
| 3 | CLV #4 | WCR-912 & WCR-914 | 720.0 | 60.0 | 60.5 | 61.7 | 12.0 | 1 |
| 4 | CLV #4 | WCR-913 & WCR-915 | 720.0 | 0.0 | 0.0 | 61.7 | 12.4 | 1 |
| 5 | CUV #1 | WCR-920 & WCR-922 | 480.0 | 0.0 | 0.0 | 104.0 | 12.0 | 1 |
| 6 | CUV #1 | WCR-921 & WCR-923 | 480.0 | 140.0 | 135.2 | 108.0 | 12.0 | 1 |
| 7 | CUV #4 | WCR-932 & WCR-934 | 480.0 | 50.0 | 49.1 | 96.0 | 12.3 | 1 |
| 8 | CUV #4 | WCR-933 & WCR-935 | 480.0 | 0.0 | 0.0 | 104.0 | 12.2 | 1 |
| 9 | RCP #1 | WCR-941 & WCR-945 | 360.0 | 0.0 | 0.0 | 46.3 | 12.3 | 1 |
| 10 | RCP #1 | WCR-951 & WCR-955 | 360.0 | 0.0
0.0 | 0.0
0.0 | 46.3
46.3 | 12.3
12.3 | 1
1 |
| 11 | RCP #4 | WCR-944 & WCR-948 | 360.0 | 0.0
0.0 | 0.0
0.0 | 69.0
88.0 | 12.5
12.4 | 2
1 |
| 12 | RCP #4 | WCR-954 & WCR-956 | 360.0 | 0.0 | 0.0 | 82.0 | 12.4 | 1 |



***** D. C. COOK NUCLEAR PLANT, UNIT NO. 2 *****
 TYPE "B" AND "C" LEAK RATE TEST OF CONTAINMENT ISOLATION VALVES

TABLE 2
 TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|--------|-------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| ----- | | ----- | ----- | ----- | ----- | ----- | ----- | --- |
| 13 | CLV #2 | WCR-904 & WCR-906 | 720.0 | 155.0 | 156.9 | 63.0 | 12.3 | 2 |
| 14 | CLV #2 | WCR-905 & WCR-907 | 720.0 | 275.0 | 276.8 | 63.0 | 12.0 | 2 |
| 15 | CLV #3 | WCR-908 & WCR-910 | 720.0 | 210.0 | 211.0 | 70.9 | 12.3 | 3 |
| 16 | CLV #3 | WCR-909 & WCR-911 | 720.0 | 50.0 | 50.1 | 70.9 | 12.2 | 3 |
| 17 | CUV #2 | WCR-924 & WCR-926 | 480.0 | 100.0 | 100.9 | 63.0 | 12.1 | 2 |
| 18 | CUV #2 | WCR-925 & WCR-927 | 480.0 | 0.0 | 0.0 | 63.0 | 12.2 | 2 |
| 19 | CUV #3 | WCR-928 & WCR-930 | 480.0 | 20.0 | 20.3 | 61.0 | 12.3 | 2 |
| 20 | CUV #3 | WCR-929 & WCR-931 | 480.0 | 45.0 | 45.6 | 61.0 | 12.2 | 2 |
| 21 | RCP #2 | WCR-942 & WCR-946 | 360.0 | 200.0 | 201.5 | 66.0 | 12.2 | 2 |
| 22 | RCP #2 | WCR-952 & WCR-956 | 360.0 | 150.0 | 151.1 | 66.0 | 12.2 | 2 |
| 23 | RCP #3 | WCR-943 & WCR-947 | 360.0 | 100.0 | 100.4 | 66.0 | 12.0 | 2 |
| 24 | RCP #3 | WCR-953 & WCR-957 | 360.0 | 100.0 | 100.4 | 66.0 | 12.0 | 2 |



TABLE 2
 TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------|-------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| ----- | ----- | | ----- | ----- | ----- | ----- | ----- | --- |
| 25 | INST. RM. EAST | WCR-960 & WCR-962 | 240.0 | 0.0 | 0.0 | 69.0 | 12.1 | 2 |
| 26 | INST. RM. EAST | WCR-961 & WCR-963 | 240.0 | 0.0 | 0.0 ✓ | 69.0 | 12.1 | 2 |
| 27 | INST. RM. WEST | WCR-964 & WCR-966 | 240.0 | 0.0 | 0.0 | 69.0 | 12.4 | 2 |
| 28 | INST. RM. WEST | WCR-965 & WCR-967 | 240.0 | 0.0 | 0.0 ✓ | 69.0 | 12.2 | 2 |
| 29 | INST. RM. VENT. SUPPLY | VCR-101 & VCR-201 | 1680.0 | 25.0 | 25.0 ✓ | 68.0 | 12.0 | 4 |
| 30 | INST. RM. VENT. SUPPLY | VCR-102 & VCR-202 | 1680.0 | 100.0 | 100.8 ✓ | 68.0 | 12.3 | 4 |
| 31 | LOWER VENT. SUPPLY | VCR-103 & VCR-203 | 2880.0 | 100.0 | 100.0 ✓ | 74.0 | 12.2 | 4 |
| 32 | LOWER VENT. EXH. | VCR-104 & VCR-204 | 3600.0 | 600.0 | 600.6 ✓ | 71.0 | 12.1 | 4 |
| 33 | UPPER VENT. SUPPLY | VCR-105 & VCR-205 | 3600.0 | 115.0 | 115.9 ✓ | 64.0 | 12.1 | 2 |
| 34 | UPPER VENT. EXH. | VCR-106 & VCR-206 | 2880.0 | 400.0 | 399.6 ✓ | 75.1 | 12.2 | 3 |
| 35 | PRESS. EQUALIZATION | VCR-107 & VCR-207 | 1440.0 | 1700.0 | 1691.9 ✓ | 75.1 | 12.0 | 3 |
| 36 | HYDROGEN RETURN LINE | ECR-10 & ECR-20 | 60.0 | 20.0 | 20.2 ✓ | 63.0 | 12.2 | 2 |

TABLE 2
 TYPE-"C" DATA INFORMATION ..

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|-------------------|-----------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| ----- | ----- | | ----- | ----- | ----- | ----- | ----- | --- |
| 37 | ESR-1 | ECR-11 & ECR 21 | 60.0 | 0.0 | 0.0 | 73.0 | 12.1 | 2 |
| 38 | ESR-2 | ECR-12 & ECR 22 | 60.0 | 0.0 | 0.0 | 73.0 | 12.1 | 2 |
| 39 | ESR-3 | ECR-13 & ECR 23 | 60.0 | 0.0 | 0.0 | 73.0 | 12.2 | 2 |
| 40 | ESR-4 | ECR-14 & ECR 24 | 60.0 | 0.0 | 0.0 | 67.0 | 12.1 | 2 |
| 41 | ESR-5 | ECR-15 & ECR 25 | 60.0 | 0.0 | 0.0 | 67.0 | 12.2 | 2 |
| 42 | ESR-6 | ECR-16 & ECR 26 | 60.0 | 0.0 | 0.0 | 67.0 | 12.2 | 2 |
| 43 | ESR-7 | ECR-17 & ECR 27 | 60.0 | 0.0 | 0.0 | 65.0 | 12.2 | 2 |
| 44 | ESR-8 | ECR-18 & ECR 28 | 60.0 | 20.0 | 20.0 | 73.0 | 12.2 | 2 |
| 45 | ESR-9 | ECR-19 & ECR 29 | 60.0 | 0.0 | 0.0 | 65.0 | 12.2 | 2 |
| 46 | RCP #1 SEAL WATER | CS-442-1 | 120.0 | 0.0 | 0.0 | 75.0 | 12.0 | 4 |
| 47 | RCP #4 SEAL WATER | CS-442-4 | 120.0 | 0.0 | 0.0 | 70.0 | 12.4 | 4 |
| 48 | RCP #2 SEAL WATER | CS-442-2 | 120.0 | 20.0 | 20.1 | 70.0 | 12.2 | 4 |



TABLE 2
 TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------------|----------------------|----------------------|----------------------|--------------|--------------|--------|
| 49 | RCP #3 SEAL WATER CS-442-3 | 120.0 | 0.0 | 0.0 | 70.0 | 12.2 | 4 |
| 50 | RELIEF VALVE HEADER TO PRT SI-189 | 120.0 | 20.0 | 20.1 | 64.0 | 12.0 | 4 |
| 51 | AIR PART. RAD GAS MONITOR SM-1 | 60.0 | 0.0 | 0.0 | 70.0 | 12.2 | 4 |
| 52 | NITROGEN TO ACCUMULATORS N-102 | 60.0 | 55.0 | 55.1 | 73.0 | 12.2 | 4 |
| 53 | NITROGEN TO PRT N-159 | 45.0 | 34000.0
0.0 | 34226.8
0.0 | 63.0
65.0 | 12.0
12.0 | 4
4 |
| 54 | PRIMARY WATER TO PRT PW-275 | 180.0 | 20.0 | 20.0 | 75.0 | 12.2 | 4 |
| 55 | CHARGING TO REGEN. HX. CS-321 | 180.0 | 155.0 | 155.4 | 75.0 | 12.4 | 4 |
| 56 | DEAD WEIGHT CALIBRATOR NPX-151-V1 | 30.0 | 0.0 | 0.0 | 64.0 | 12.0 | 2 |
| 57 | GLYCOL SUPPLY VCR-10 & VCR-11 | 480.0 | 0.0 | 0.0 | 79.2 | 12.0 | 3 |
| 58 | GLYCOL RETURN VCR-20 & VCR-21 | 480.0 | 0.0 | 0.0 | 79.2 | 12.0 | 3 |
| 59 | RCDT VENT HEADER DCR-203 & DCR-207 | 120.0 | 55.0 | 54.5 | 79.2 | 12.0 | 3 |
| 60 | RCDT VENT HEADER N-160 & DCR-201 | 120.0 | 500.0
50.0 | 495.7
50.2 | 79.2
67.0 | 12.0
12.1 | 3
2 |



***** D. C. COOK NUCLEAR PLANT, UNIT NO. 2 *****
 TYPE "B" AND "C" LEAK RATE TEST OF CONTAINMENT ISOLATION VALVES

TABLE 2

TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------------------|----------------------|----------------------|----------------------|--------------|--------------|--------|
| 61 | I/C AHU DRAIN HDR. DCR-610 & DCR-611 | 300.0 | 0.0 | 0.0 | 81.3 | 12.0 | 3 |
| 62 | CLV AND CUV DRAIN HDR. DCR-620 & DCR-621 | 120.0 | 400.0
0.0 | 400.4
0.0 | 68.9
70.9 | 12.0
12.0 | 3
3 |
| 63 | RCDT DRAIN HDR. DCR-205 & DCR-206 | 480.0 | 0.0 | 0.0 | 79.2 | 12.3 | 3 |
| 64 | CONT. SUMP TO HUT DCR-600 & DCR-601 | 360.0 | 0.0 | 0.0 | 73.0 | 12.0 | 3 |
| 65 | LETDOWN QCR-300 | 120.0 | 0.0 | 0.0 | 79.2 | 12.2 | 3 |
| 66 | LETDOWN QCR-301 | 120.0 | 0.0 | 0.0 | 79.2 | 12.2 | 3 |
| 67 | RCP SEAL WATER RETURN QCM-250 & QCM-350 | 480.0 | 60.0 | 60.3 | 70.9 | 12.3 | 3 |
| 68 | RHR RECIRC. 'E' ICM-305 | 1080.0 | 150.0 | 150.4 | 73.0 | 12.3 | 3 |
| 69 | RHR RECIRC. 'W' ICM-306 | 1080.0 | 140.0 | 139.9 | 73.0 | 12.1 | 3 |
| 70 | PW FOR RX CAV. SCRUB QCR-919 & QCR-920 | 120.0 | 0.0 | 0.0 | 77.2 | 12.0 | 3 |
| 71 | REFUEL. WATER TO RX CAV. SF-152 & SF-154 | 300.0 | 80.0 | 79.6 | 79.2 | 12.2 | 3 |
| 72 | REFUEL CAV. DRAIN SF-159 & SF-160 | 360.0 | 0.0 | 0.0 | 75.1 | 12.1 | 3 |

***** D. C. COOK NUCLEAR PLANT, UNIT NO. 2 *****
 TYPE "G" AND "C" LEAK RATE TEST OF CONTAINMENT ISOLATION VALVES

TABLE 2

TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|-------------------------|-------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 73 | HOT LEG SAMPLES | NCR-105 & NCR-106 | 60.0 | 20.0 | 20.0 | 70.9 | 12.0 | 3 |
| 74 | PRESS. LIQ. SAMPLES | NCR-107 & NCR-108 | 60.0 | 0.0 | 0.0 | 78.2 | 12.1 | 3 |
| 75 | STEAM SAMPLE | NCR-109 & NCR-110 | 60.0 | 0.0 | 0.0 | 70.9 | 12.2 | 3 |
| 76 | RCDT SAMPLE | RCR-100 & RCR-101 | 60.0 | 0.0 | 0.0 | 78.2 | 12.2 | 3 |
| 77 | PRT SAMPLE | DCR-202 & DCR-204 | 60.0 | 0.0 | 0.0 | 78.2 | 12.2 | 3 |
| 78 | ACCUM. SAMPLE | ICR-5 & ICR-6 | 60.0 | 0.0 | 0.0 | 78.2 | 12.2 | 3 |
| 79 | AIR PART. RAD. GAS MON. | ECR-33 & ECR-35 | 60.0 | 80.0 | 79.8 | 73.0 | 12.0 | 3 |
| 80 | NORTH SI DISCH. | ICM-260 | 240.0 | 0.0 | 0.0 | 69.0 | 12.2 | 2 |
| 81 | SOUTH SI DISCH. | ICM-265 | 240.0 | 0.0 | 0.0 | 68.0 | 12.2 | 2 |
| 82 | AIR PART. RAD GAS MON. | ECR-31 & ECR-32 | 120.0 | 0.0 | 0.0 | 69.9 | 12.4 | 3 |
| 83 | CONTROL AIR TO CONT. | XCR-109 & XCR-101 | 120.0 | 20.0 | 20.2 | 67.0 | 12.4 | 2 |
| 84 | CONTROL AIR TO CONT. | XCR-102 & XCR-103 | 120.0 | 40.0 | 40.1 | 68.9 | 12.1 | 3 |



TYPE "B" AND "C" LEAK RATE TEST OF CONTAINMENT ISOLATION VALVES

TABLE 2
TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|-----------------------------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 85 | NITROGEN TO PRT GCR-301 | 45.0 | 50.0 | 50.5 | 65.7 | 12.3 | 3 |
| 86 | NITROGEN TO ACCUM. GCR-314 | 60.0 | 0.0 | 0.0 | 67.0 | 12.3 | 2 |
| 87 | SAFETY INJ. TEST LINE SI-171,172,194 | 60.0 | 0.0 | 0.0 | 65.7 | 12.0 | 3 |
| 88 | PW TO PRT NCR-252 | 180.0 | 0.0 | 0.0 | 69.0 | 12.1 | 2 |
| 89 | RCP OIL CLRS. CCW CCM-452,454,455 | 1200.0 | 0.0 | 0.0 | 61.5 | 12.5 | 3 |
| 90 | RCP OIL CLRS. CCW CCM-451,453,459 | 1200.0 | 0.0 | 0.0 | 66.8 | 12.3 | 3 |
| 91 | EXCESS LETDOWN HX CCW CCR-460 & CCR-462 | 360.0 | 230.0 | 230.2 | 68.9 | 12.0 | 3 |
| 92 | RX SUPPORTS CCW CCR-457 & CCW-135 | 240.0 | 0.0 | 0.0 | 68.9 | 12.5 | 3 |
| 93 | RX SUPPORTS CCW CCR-455 & CCR-456 | 240.0 | 0.0 | 0.0 | 68.9 | 12.5 | 3 |
| 94 | GRAB SAMPLE SM-4 & SM-6 | 60.0 | 0.0 | 0.0 | 59.6 | 12.3 | 1 |
| 95 | CONT. PRESS. ALARM PPP-300 | 0.0 | 0.0 | 0.0 | 69.0 | 12.1 | 2 |
| 96 | CONT. PRESS. ALARM PPP-301 | 0.0 | 0.0 | 0.0 | 67.0 | 12.0 | 2 |

TABLE 2
 TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|--------------------------------------|----------------------|----------------------------|----------------------------|----------------------|----------------------|-------------|
| 97 | CONT. PRESS. ALARM PPP-302 | 0.0 | 0.0 | 0.0 | 67.0 | 12.0 | 2 |
| 98 | CONT. PRESS. ALARM PPP-303 | 0.0 | 0.0 | 0.0 | 67.0 | 12.0 | 2 |
| 99 | CONT. PRESS. ALARM PPA-310 & PPA-311 | 0.0 | 0.0 | 0.0 | 67.0 | 12.0 | 2 |
| 100 | CONT. PRESS. ALARM PPA-312 & PPA-313 | 0.0 | 20.0 | 20.1 | 67.0 | 12.0 | 2 |
| 101 | BORON INJECTION ICM-251 | 240.0 | 700.0 | 704.7 | 68.9 | 12.3 | 3 |
| 102 | BORON INJECTION ICM-250 | 240.0 | 800.0 | 806.8 | 68.9 | 12.4 | 3 |
| 103 | WELD CHANNEL PRESS. CA-181S | 30.0 | 0.0 | 0.0 | 65.0 | 12.0 | 2 |
| 104 | WELD CHANNEL PRESS. CA-181N | 30.0 | 0.0 | 0.0 | 67.0 | 12.1 | 2 |
| 105 | GRAB SAMPLE SM-8 & SM-10 | 60.0 | 0.0 | 0.0 | 71.0 | 12.1 | 2 |
| 106 | CPN COILS 2&5 CCW CCW-243-25 | 60.0 | 20.0 | 20.2 | 63.0 | 12.2 | 4 |
| 107 | CPN COILS 2&5 CCW CCW-244-25 | 60.0 | 200.0 | 202.1 | 63.0 | 12.2 | 4 |
| 108 | CPN COILS 3&4 CCW CCW-243-72 | 60.0 | 39000.0
1000.0
150.0 | 39553.1
1000.7
151.3 | 63.0
63.0
61.0 | 12.4
12.0
12.0 | 4
4
4 |



TABLE 2
 TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|-----------------------------------------|----------------------|--------------------------|--------------------------|----------------------|----------------------|-------------|
| 109 | CPN COILS 3&4 CCW CCM-244-72 | 60.0 | 1700.0
600.0
110.0 | 1724.1
605.1
110.9 | 63.0
63.0
63.0 | 12.4
12.1
12.1 | 4
4
4 |
| 110 | CCW TO CEQ-1 CCM-430 | 90.0 | 0.0 | 0.0 | 57.6 | 12.0 | 1 |
| 111 | CCW FROM CEQ-1 CCM-431 | 90.0 | 0.0 | 0.0 | 57.6 | 12.1 | 1 |
| 112 | CPN COILS 2&5 CCW CCR-440 | 90.0 | 0.0 | 0.0 | 64.7 | 12.2 | 1 |
| 113 | CCW TO CEQ-2 CCM-432 | 90.0 | 0.0 | 0.0 | 63.0 | 12.2 | 2 |
| 114 | CCW TO CEQ-2 CCM-433 | 90.0 | 120.0 | 121.0 | 61.0 | 12.0 | 2 |
| 115 | CPN COILS 3&4 CCW CCR-441 | 90.0 | 900.0
60.0 | 905.1
60.6 | 64.0
61.7 | 12.0
12.1 | 2
1 |
| 116 | GLYCOL SUPPLY EXPANSION R-156 | 60.0 | 0.0 | 0.0 | 79.2 | 12.0 | 3 |
| 117 | GLYCOL RETURN EXPANSION R-157 | 60.0 | 0.0 | 0.0 | 79.2 | 12.0 | 3 |
| 118 | POST ACC. SAMPLE RET. NS-357 | 15.0 | 140.0
50.0 | 139.0
50.1 | 77.0
67.0 | 12.2
12.0 | 4
2 |
| 119 | POST ACC. SAMPLE RET. ECR-496 & ECR-497 | 15.0 | 400.0
0.0 | 396.6
0.0 | 79.2
70.9 | 12.0
12.0 | 3
3 |



4

7

250

1

2



***** D. C. COOK NUCLEAR PLANT, UNIT NO. 2 *****
 TYPE "B" AND "C" LEAK RATE TEST OF CONTAINMENT ISOLATION VALVES

TABLE 2
 TYPE "C" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|--------------------------------------|----------------------|----------------------|----------------------|--------------|--------------|--------|
| 120 | POST ACC. SAMPLE SUPPLY ECR-416 | 15.0 | 50.0 | 50.1 | 68.9 | 12.1 | 3 |
| 121 | POST ACC. SAMPLE SUPPLY ECR-417 | 15.0 | 0.0 | 0.0 | 68.9 | 12.0 | 3 |
| 122 | CONTAINMENT SAMPLING ECR-535 | 30.0 | 20.0 | 20.1 | 67.0 | 12.1 | 2 |
| 123 | CONTAINMENT SAMPLING ECR-536 | 30.0 | 30.0 | 30.1 | 67.0 | 12.1 | 2 |
| 124 | LOWER RMS RETURN ECR-36 | 120.0 | 50.0 | 50.3 | 69.9 | 12.3 | 3 |
| 125 | PLANT AIR TO CONT PCR-40 | 120.0 | 30.0 | 30.0 | 70.9 | 12.0 | 3 |
| 126 | PLANT AIR TO CONT CHECK VALVE PA-342 | 120.0 | 90.0 | 90.9 | 59.0 | 12.0 | 4 |
| 127 | H2 SAMPLE RETURN LINE CHK VLV NS-283 | 60.0 | 3700.0
50.0 | 3735.4
50.6 | 60.0
64.0 | 12.0
12.3 | 4
4 |
| 128 | CONTROL AIR TO CONT. XCR-101 | 60.0 | 35.0 | 34.9 | 77.0 | 12.2 | 4 |
| 129 | CONTROL AIR TO CONT. XCR-103 | 60.0 | 0.0 | 0.0 | 61.0 | 12.2 | 4 |



TYPE "B" AND "C" LEAK RATE TEST OF CONTAINMENT ISOLATION VALVES

TABLE 2
TYPE "B" DATA INFORMATION

CORRECTED RESULTS OF VALVE TESTING

| TEST STEP | DESCRIPTION | GUIDELINE
LEAKAGE | INDICATED
LEAKAGE | CORRECTED
LEAKAGE | TEMPERATURE | PRESSURE | LRM |
|-----------|------------------------------------------|----------------------|----------------------|----------------------|-------------|----------|-----|
| 1 | 612° AIRLOCK | 5511.0 | 110.0 | 110.4 | 70.0 | 12.2 | 3 |
| 2 | 650° AIRLOCK | 5511.0 | 0.0 | 0.0 | 74.0 | 12.1 | 2 |
| 3 | ZONE 3 PENETRATIONS | 1173.0 | 0.0 | 0.0 | 63.6 | 12.1 | 3 |
| 4 | ZONE 4 PENETRATIONS | 1173.0 | 70.0 | 70.0 | 62.6 | 12.1 | 3 |
| 5 | FUEL TRANSFER BLIND FLANGE CPN-1 | 1200.0 | 0.0 | 0.0 | 71.0 | 12.2 | 2 |
| 7 | ICE LOADING BLIND FLANGE CPN-57 | 480.0 | 0.0 | 0.0 | 65.8 | 12.1 | 1 |
| 8 | ICE LOADING BLIND FLANGE CPN-80 | 720.0 | 0.0 | 0.0 | 65.8 | 12.1 | 1 |
| 9 | FLUX THIMBLE FLANGE | 960.0 | 120.0 | 119.9 | 70.9 | 12.0 | 3 |
| 10 | SPARE PENETRATION CPN-67 | 240.0 | 30.0 | 30.2 | 64.7 | 12.0 | 3 |
| 11 | 650° EQUIP. HATCH RING BODY FLANGE SEAL | 55.0 | 0.0 | 0.0 | 69.0 | 12.5 | 2 |
| 12 | 650° AIRLOCK EQUIP. HATCH COVER FLG SEAL | 55.0 | 0.0 | 0.0 | 74.0 | 12.0 | 3 |

11



TABLE 3

VALVES REPAIRED FOR EXCESSIVE LEAKAGE

AS FOUND TESTING

| <u>VALVE</u> | <u>SYSTEM</u> | <u>INITIAL LEAKAGE
(SCCM)</u> | <u>RESULTING LEAKAGE
(SCCM)</u> | <u>CORRECTIVE ACTION</u> |
|--------------|----------------------------------------------|-----------------------------------|-------------------------------------|--------------------------------------------|
| SF-160 | Refueling
Cavity
Drain | 43,038.6 | 0.0 | Replaced Diaphragm,
Adjusted Travel Nut |
| NS-283 | Hydrogen
Sample Return | 598.3 | 40.0 | Replaced spring,
Lapped Seat |
| CS-442-2 | Reactor Coolant Pump
Seal Water Injection | 401.6 | 80.0 | Replaced Disc
Lapped Seat |

AS LEFT TESTING

| | | | | |
|-----------------------|-------------------------------------------------|----------|-------|------------------------------------------------------------------|
| VCR-205 | Upper Containment
Ventilation Supply | 17,000 | 115.9 | Adjusted Arm
Actuator |
| N-159 | Nitrogen to
Pressure Relief Tank | 34,226.8 | 0.0 | Installed New Disc
and Spring |
| N-160 | Reactor Coolant
Drain Tank Header | 495.7 | 50.2 | Valve Internals
Cleaned |
| *DCR-620
& DCR-621 | Containment Upper
& Lower Vent
Unit Drain | 400.4 | 0.0 | Cleaned, Lapped
Both Valves |
| *ECR-33
& ECR-35 | Air Particle
Rad Gas Monitor | >55,000 | 79.8 | Internals Replaced
(ECR-33),
Internals Cleaned
(ECR-35) |

AS LEFT TESTING

| <u>VALVE</u> | <u>SYSTEM</u> | <u>INITIAL LEAKAGE
(SCCM)</u> | <u>RESULTING LEAKAGE
(SCCM)</u> | <u>CORRECTIVE ACTION</u> |
|--------------|--------------------------------|-----------------------------------|-------------------------------------|--------------------------|
| NS-357 | Post Accident
Sample Return | 139.6 | 50.1 | Cleaned Internals |
| ECR-496 | Post Accident
Sample Return | 396.6 | 0.0 | Cleaned Internals |
| NS-283 | Hydrogen Sample
Return Line | 3735.4 | 50.6 | Lapped Seat |

* Valve Tested Together

